Food and Agriculture Organization of the United Nations

UN environment programme

World Health Organization

World Organisation for Animal Health
Founded as OIE

Summary Report of the Online Survey for Updating the Global Action Plan on Antimicrobial Resistance

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Contents

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This document was developed by the Quadripartite organizations comprising the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the World Health Organization (WHO) and the World Organisation for Animal Health (WOAH), coordinated by the Quadripartite Joint Secretariat on AMR.

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Abbreviations

AMR – Antimicrobial Resistance
AMS – Antimicrobial Stewardship
AMU – Antimicrobial Use
ANIMUSE – Global Database for Antimicrobial Use in Animals
FAO – Food and Agriculture Organization of the United Nations
FAO-ATLASS – FAO Assessment Tool for Laboratories and AMR Surveillance Systems
GAP-AMR – Global Action Plan on Antimicrobial Resistance
GISSA – Global Integrated System for Surveillance on AMR/AMU
GLASS – Global Antimicrobial Resistance and Use Surveillance System
InFARM – International FAO Antimicrobial Resistance Monitoring system
IPC – Infection Prevention and Control
LMICs – Low- and Middle-Income Countries
M&E – Monitoring and Evaluation
MPTF – Multi-Partner Trust Fund (for AMR)
NAP(s) – National Action Plan(s) on AMR
OTC – Over-the-Counter
R&D – Research and Development
RENOFARM – Reducing Need for Antimicrobials on Farms through Improved Livestock Health and Welfare
SDGs – Sustainable Development Goals
SMART – Specific, Measurable, Achievable, Relevant, Time-bound
UHC – Universal Health Coverage
UN – United Nations
UNEP – United Nations Environment Programme
UNGA – United Nations General Assembly
WHO – World Health Organization
WOAH – World Organisation for Animal Health (formerly OIE)
WASH – Water, Sanitation and Hygiene

Executive summary

This report summarizes the findings from an online survey conducted by the Quadripartite organizations (FAO, UNEP, WHO, and WOAH) as part of the consultation process to update the 2015 Global Action Plan on Antimicrobial Resistance (GAP-AMR) by 2026 as per the United Nations General Assembly's mandate. The survey gathered 397 valid responses from UN Member States and diverse stakeholders, from human and animal health, agrifood systems, the environment, education, and finance sectors.

Respondents broadly affirmed the continued relevance of the goal and the five existing strategic objectives but called for greater clarity, measurability, and stronger integration of One Health principles. Key recommendations included enhancing cross-sectoral governance, aligning objectives with the Sustainable Development Goals (SDGs), linking AMR interventions to broader development agendas, universal health coverage and primary health care, biosecurity etc., promoting equitable access to human and animal health services that provide access to antimicrobials and diagnostics, and expanding prevention, surveillance and stewardship systems, frameworks and guidance to include companion animals, as well as including prominently the environmental and climate-sensitive dimensions. Respondents urged a shift from individual behavior change toward community- and system-level action, along with sustained investment in research and development, innovation, and infrastructure.

Across all sectors, there was strong support for embedding a robust monitoring and evaluation framework within the updated GAP-AMR, featuring core, adaptable indicators to ensure transparency, coordination, and progress tracking. Respondents also emphasized the need for an updated framework for action that clarifies stakeholder roles, supports low- and middle-income countries implementation, and aligns with global commitments, such as the Political Declaration on AMR adopted by the 79th United Nations General Assembly High-level Meeting.

Throughout, the survey revealed consensus on the urgency of transforming the updated GAP-AMR into a more inclusive, actionable, and accountable tool to guide global AMR responses across the human-animal-food and agriculture and environment sectors, with particular attention to equitable access, environment and climate change, biodiversity loss, pollution, conflicts and local realities. This report provides the technical and strategic foundation for the next stages of the GAP-AMR update process.

Introduction

Antimicrobial resistance (AMR) poses a profound and growing threat to global health, food security, environmental sustainability, and economic development. The Global Action Plan on AMR (GAP-AMR)[1] was adopted by the World Health Assembly (WHA) in 2015 and subsequently endorsed by the Governing Bodies of the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (WOAH), and welcomed by the governing body of the United Nations Environment Programme (UNEP), which together form the Quadripartite. The AMR Political Declaration adopted by the 71st UN General Assembly (UNGA)[2] in 2016 affirmed the GAP-AMR and its five strategic objectives as the blueprint for addressing AMR globally and has informed the development of National Action Plans (NAPs) on AMR.

By the end of 2023, 178 countries had developed NAPs based on this framework with 68% implementing part of their plans, 25% having costed and budgeted NAPs and with Monitoring & Evaluation (M&E) frameworks. However, so far only 10% of countries have responded that they have made specific domestic financial provisions for implementing their NAPs.[3] A comprehensive review of the GAP-AMR conducted by WHO in September 2021

[1] Global action plan on antimicrobial resistance. https://www.who.int/publications/i/item/9789241509763
[2] Political Declaration of the High-Level Meeting of the General Assembly on Antimicrobial Resistance 2016. https://digitallibrary.un.org/record/842813?v=pdf
[3] TrACSS Data 2024: Global Database for Tracking Antimicrobial Resistance (AMR) Country Self- Assessment Survey (TrACSS). https://www.amrcountryprogress.org/

highlighted the need to better reflect a One Health approach.[4,5,6,7] Similar conclusions were reached through WOAH 2016 strategy on AMR,[8] FAO action plans on AMR for the periods 2016-2020[9] and 2021-2025,[10] an evaluation of FAO's work on AMR in 2021[11] and UNEP's landmark report,[12] all underscoring the need for a more robust, inclusive and multisectoral One Health response.

Recognizing these gaps, the Political Declaration adopted by the UNGA in 2024 mandated "*the Quadripartite organizations, in consultation with Member States, to update the Global Action Plan on Antimicrobial Resistance by 2026 to ensure a robust and inclusive multisectoral response, through a One Health approach*"[13]. This mandate was reaffirmed by WHO Member States through decision WHA78(15), requesting the WHO Director-General to present the updated GAP-AMR for consideration at the 79th World Health Assembly in May 2026.[14]

In response, the Quadripartite initiated a phased, evidence-based approach to updating the GAP-AMR. The first phase included structured, open consultations with technical experts, stakeholders, and Member States. This report presents the findings from the initial global online survey conducted in May-June 2025, which sought diverse perspectives from a wide array of stakeholders on the vision, scope, and priorities for the updated GAP-AMR. The survey highlighted lessons learned from previous implementation efforts, emerging challenges, and new thematic priorities.

The findings informed the initial draft of the GAP for consultations with stakeholders and Member States consultations on its content, paving the way for its formal adoption.

Methodology

Design and objectives

A cross-sectional survey to collect Member States and stakeholder inputs was used as part of the formal consultation process for updating the GAP-AMR.[15] This survey aimed to capture diverse multisectoral perspectives, including human health, animal health, agrifood systems, environmental sectors, and related domains, on the necessary updates to the GAP-AMR in response to evolving global context and needs, guided by the 2024 UNGA Political Declaration on AMR.

Online survey

A semi-structured, self-administered questionnaire was developed and hosted on the SurveyMonkey platform. The questionnaire consisted of six sections: (1) Respondent Information, (2) Goal of the GAP-AMR, (3) Scope and Structure of the Updated GAP-AMR, (4) Strategic Objectives, (5) Technical Content, and (6) Framework for Action

[4] Comprehensive Review of the WHO Global Action Plan on Antimicrobial Resistance. https://cdn.who.int/media/docs/default-source/antimicrobial-resistance/evaluation-brief-amr-final.pdf?sfvrsn=6a7f4398_1
[5] Comprehensive Review of the WHO Global Action Plan on Antimicrobial Resistance. Volume 1: Report. https://cdn.who.int/media/docs/default-source/documents/about-us/evaluation/gap-amr-final-report-v2.pdf?sfvrsn=1db7e8b0_1&download=true
[6] Comprehensive Review of the WHO Global Action Plan on Antimicrobial Resistance. Volume 2: Annexes. https://cdn.who.int/media/docs/default-source/documents/about-us/evaluation/gap-amr-final-annexes-v2.pdf?sfvrsn=d7c23fe7_1&download=true
[7] WHO strategic and operational priorities to address drug-resistant bacterial infections in the human health sector, 2025–2035. https://apps.who.int/gb/ebwha/pdf_files/WHA77/A77_5-en.pdf
[8] WOAH. Strategy on Antimicrobial Resistance and the Prudent Use of Antimicrobials. https://www.woah.org/app/uploads/2021/03/en-amr-strategy-final.pdf
[9] The FAO Action Plan on Antimicrobial Resistance 2016–2020. https://www.fao.org/fsnforum/resources/reports-and-briefs/fao-action-plan-antimicrobial-resistance-2016-2020
[10] The FAO Action Plan on Antimicrobial Resistance 2021–2025. https://openknowledge.fao.org/items/d919cbe3-77d0-4116-a543-6d4b179e7a09
[11] Evaluation of FAO's role and work on antimicrobial resistance (AMR). https://openknowledge.fao.org/server/api/core/bitstreams/806402a6-a4a8-45a6-bae4-4cf5ae983f55/content
[12] Bracing for Superbugs: Strengthening environmental action in the One Health response to antimicrobial resistance | UNEP - UN Environment Programme. https://www.unep.org/resources/superbugs/environmental-action
[13] Political declaration of the high-level meeting on antimicrobial resistance. 2024. https://docs.un.org/A/79/L.5
[14] WHA78/15: https://apps.who.int/gb/ebwha/pdf_files/WHA78/A78_(15)-en.pdf
[15] Updating the Global Action Plan on AMR. https://www.qjsamr.org/technical-work/updating-the-global-action-plan-on-amr

and Additional Inputs. The questionnaire consisted of a total of 47 questions and included a combination of closed-ended items (e.g., Likert-scale and multiple-choice questions) and open-ended questions to gather both quantitative and qualitative data. A full copy of the survey questionnaire is provided in **Appendix 1** for reference.

Respondents were encouraged to review key background documents, such as the original 2015 GAP-AMR, high-level political declarations, and technical reports, before completing the survey. The survey design allowed for responses from individuals as well as collaborative inputs from groups or institutions.

Dissemination and data collection

The survey was disseminated globally through multiple platforms to ensure broad participation across sectors and regions. Dissemination channels included official communications from the Quadripartite Organizations (FAO, UNEP, WHO, WOAH), partner networks, email lists, institutional websites, and social media platforms. Data collection was conducted over a one-month period, from 1 May to 8 June 2025.

Participation was open to representatives from Member States, intergovernmental organizations, academic and research institutions, the private sector, civil society, and individual experts across all relevant sectors. Respondents were asked to self-identify their sectoral affiliation, geographical focus, and years of experience in AMR-related work. Collaborative submissions from multiple contributors were permitted and noted in the survey response.

Data management

The SurveyMonkey platform was the primary tool used for data collection; however, some participants submitted their responses by sending a completed Word document. Responses received in Word format were manually entered into the database by the Quadripartite core working group. Submissions without participant consent were excluded. Additionally, only responses that included data beyond Section 1 (Respondent Information) were retained for analysis; records limited to respondent information were excluded.

Disaggregation by UN Member State status was based on responses to Question 4: “Are you responding on behalf of a UN Member State?” Sectoral disaggregation was determined using responses to Question 9, which inquired about the respondent’s sector. Due to limitations in the survey design, it was not possible to determine whether multiple submissions from the same country originated from a single sector or from multiple sectors. As such, multiple entries from the same country were interpreted as representing different sectors.

Sectoral data analysis and integration

To ensure in-depth, sector-specific insights, each of the Quadripartite organizations was responsible for conducting the initial analysis of data from one sector; while their mandates are inherently cross-cutting, the analysis was carried out in an integrated, cross-sectoral manner to capture interlinkages and shared challenges:

- FAO undertook the agrifood systems sectoral analysis.
- UNEP conducted the environmental sector analysis.
- WHO led the analysis of responses from the human health sector and, as the host of the Quadripartite Joint Secretariat on AMR, also conducted an integrated multi-sectoral analysis to assess cross-cutting themes and interactions.
- WOAH undertook animal health sectoral analysis.

Quantitative data from closed-ended questions were exported from SurveyMonkey and analyzed descriptively using Microsoft Excel and NVivo 15 (QSR International). Frequencies, percentages, and cross-tabulations were used to summarize demographic characteristics, sectoral representation, regional distribution (based on UN regional

groups)[16] and levels of agreement with key survey items. Visualizations such as stacked column graphs were generated to enhance interpretation.

Qualitative data from open-ended responses was analyzed using NVivo 15. For selected questions informed by discussions among the Quadripartite organizations, a thematic analysis approach was applied to code and categorize responses, identify recurring themes, and extract key insights. Thematic coding was stratified by sector to capture sector-specific perspectives. The coding process was primarily deductive, guided by a set of pre-defined themes developed through discussions with the core working group. These themes reflected the anticipated areas of focus based on prior deliberations. The analysis also allowed for inductive flexibility: when novel or unexpected themes emerged from the data, they were incorporated into the coding framework to ensure comprehensive representation of respondent perspectives. Theme frequencies across overall responses for key open-ended questions are presented in **Appendix 2**. For each open-ended question, concise summaries of key findings were developed based on consensus among the Quadripartite organizations.

Ethics and Consent

Before beginning the survey, all participants were required to review a consent statement and indicate their agreement for the anonymous use of their responses for analysis, reporting, and publication purposes. Participation was voluntary, and no personal identifiable information was published. No information about patients or patient data was accessed or collected as part of this consultation. Data was stored securely and managed in compliance with the confidentiality policies of the Quadripartite organizations.

[16] Regional groups of Member States. https://www.un.org/dgacm/en/content/regional-groups

Result

Section 1. Participation Overview

In this section, we asked about the respondent information.

- Completed and valid for the analysis: 397
  - Total number of responses recorded via SurveyMonkey platform: 742
  - Responses submitted by Word document: 2
  - Excluded: 8 responses without consent and 339 incomplete responses (i.e., without any input after Section 2)

- Among the 397 respondents, 138 responses (34.8%) were submitted on behalf of United Nations (UN) Member States. Some Member States submitted multiple entries, suggesting input from different sectors. In total, responses were received from 92 unique Member States.

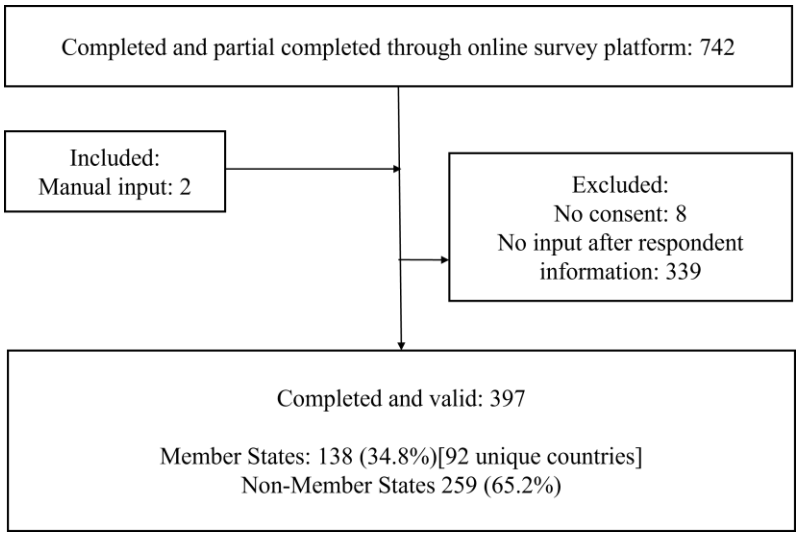

Figure 1. Data management flow.

- Respondent sector affiliation (multiple selections allowed) [**Figure 2**]. For Member States, this question was optional.

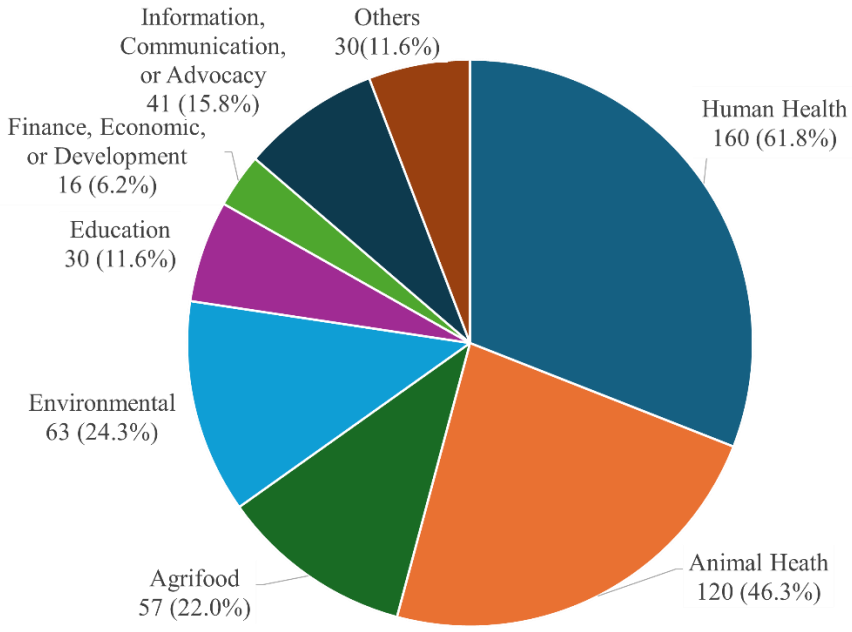

Figure 2. Respondent sector affiliation (Non-Member States only [n=259]). Multiple selections allowed.

- UN region(s) the respondents' work primarily impact (multiple answers allowed) [**Figure 3AB**]

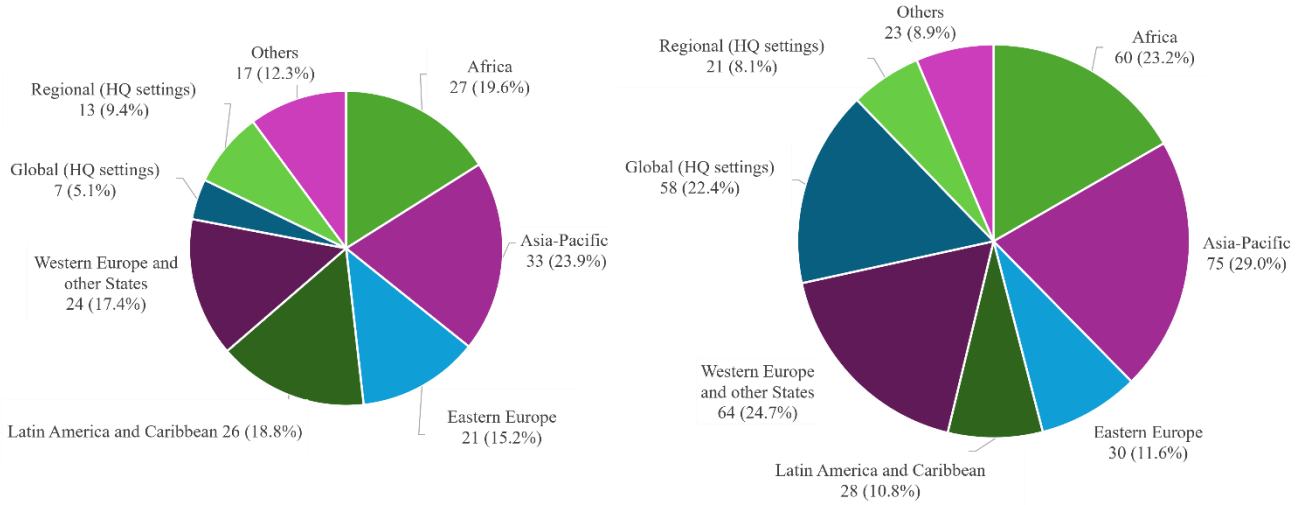

Figure 3. Regional Distribution of Respondents. (A) Member States (n = 138) [left]; (B) Non-Member States (n = 259) [right].

Section 2: Goal of the GAP-AMR

Overall goal of the GAP-AMR as defined in 2015 was *"The overall goal of the action plan is to ensure, for as long as possible, continuity of the ability to treat and prevent infectious diseases with effective and safe medicines that are quality-assured, used in a responsible way, and accessible to all who need them."*

13. To what extent do you agree with the following statement? "The current GAP-AMR's goal sufficiently reflects the evolving challenges of AMR, One Health and sectoral needs for addressing AMR in the human health, animal health, agrifood, and the environmental sectors" [Figure 4]

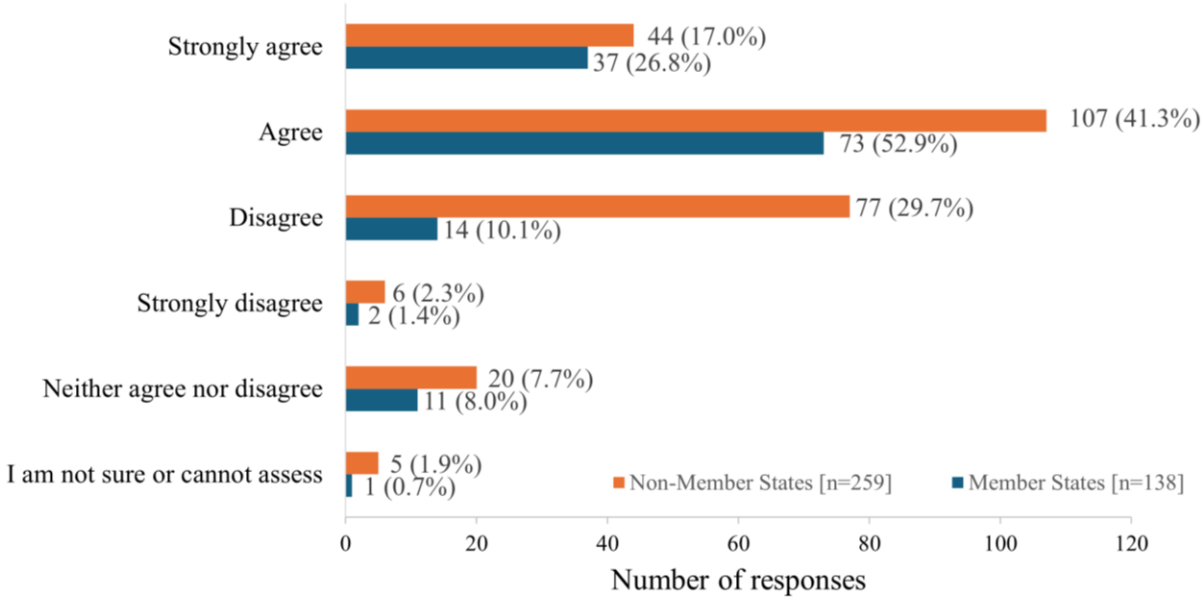

Figure 4. The agreement level for the goal statement

14. What aspects of the current GAP-AMR goal statement require an update?

Across all sectors:

- **One Health integration:** Strong consensus on the need to revise the GAP-AMR to fully adopt the One Health approach, ensuring both multisectoral collaboration and sector-specific action. Current framing is seen as too human-centric, lacking adequate attention to intersectoral links.
- **Equity, access, and social determinants:** Emphasis on equitable access to quality antimicrobials including antifungals and antivirals, alternatives to antimicrobials, vaccines, diagnostics, laboratory capacity, and clean water, particularly for low- and middle-income countries (LMICs). The updated GAP-AMR should address socioeconomic, gender, and geographic disparities in AMR impacts and resources.
- **Governance, financing, accountability, political commitment, and sustainability:** There is a call for improved global and national governance structures, with clear accountability mechanisms and meaning engagement with stakeholders, including through the Multi-Stakeholder Partnership Platform (MSPP).[17] Proposals include utilizing the existing AMR Multi-Partnership Trust Fund (MPTF)[18] as a dedicated and sustainable funding mechanism for AMR, with particular attention to supporting resource mobilization in LMICs to ensure effective implementation. Strengthening political commitment remains essential, alongside mechanisms to secure long-term sustainability of the GAP-AMR. Greater emphasis is also needed on how GAP-AMR contributes to the achievement of the sustainable development goals (SDGs), as well as on mainstreaming AMR into broader development agendas and integrating it across sector-specific strategies, policies, and plans to streamline domestic financing and ensure sustained support for AMR interventions.

[17] AMR Multistakeholder Partnership Platform. https://www.qjsamr.org/multistakeholder-partnership-platform/about
[18] AMR Multi-Partner Trust Fund. https://www.qjsamr.org/multi-partner-trust-fund/about

- **Surveillance and data sharing:** Countries need first to strengthen sector-specific AMR and antimicrobial use (AMU) surveillance systems as a foundation, building towards robust, integrated, and interoperable surveillance across sectors. This requires harmonizing and leveraging existing systems in humans, animals, plants and the environment to generate evidence for decision-making. Advocates also call for shared protocols and mechanisms or agreements for data sharing within and across sectors, enabling timely and, where possible, real-time data exchange to monitor AMR trends effectively. The Global Integrated Surveillance System on Antimicrobial Resistance and Use (GISSA)[19] is highlighted as a key mechanism to support integration and coordination.
- **Strengthening systems through prevention and stewardship:** Strong support for comprehensive primary and secondary prevention strategies, including infection prevention and control (IPC), antimicrobial stewardship (AMS) programs, water, sanitation and hygiene (WASH), vaccination, biosecurity and good animal husbandry practices, early diagnosis and prompt treatment, as well as wastewater management across sectors. Such approaches are essential to advancing preventive action and ensuring all One Health sectors are adequately represented.
- **Research and development (R&D), innovation, and new technologies:** Focus should be on integrating findings from recent studies and addressing the interconnectedness of human, animal, and environmental health to foster a more coordinated global response. There is a call for innovation beyond traditional antimicrobials, including alternative therapies, vaccines, better diagnostics, waste and wastewater management and emerging technologies such as artificial intelligence (AI). The future Independent Panel on Evidence for Action against Antimicrobial Resistance (IPEA) could play a key role in gathering and synthesizing evidence and translating knowledge into actionable policy and practical solutions, thereby addressing the persistent gap between research and implementation. Reference to existing global AMR research agendas and priority pathogens lists is needed to guide R&D. Equally important are increased public investments in push-and-pull incentives, equitable access to research funding, medicines and vaccines, new procurement mechanism, and strengthened regulatory frameworks to accelerate innovation and ensure equitable access.
- **Environmental dimensions of AMR and climate change:** There is widespread recognition that environmental drivers and climate change intensify AMR risks. Respondents emphasized the importance of integrating sustainable environmental practices and preventing and tackling AMR in the environment and antimicrobial pollution across key sectors.
- **Community engagement, education, and awareness:** Emphasis on promoting community awareness and behavior change to foster responsible AMU and disposal through inclusive, culturally relevant, and context-specific communication strategies. Education and training should target a broad range of stakeholders, including schoolchildren, health workers, veterinarians, producer associations, crop fertilizer users, pharmaceutical companies, drug sellers, environmental professionals and regulators, and consumers, across the human, animal, agrifood, and environmental sectors, with recognition of the critical role of food chains in shaping behavior patterns. The use of social sciences is critical to ensure tailored, effective approaches, complemented by the engagement of media, influencers, the arts, and AMR survivors to shape narrative and mobilize collective action.

[19] Quadripartite One Health Integrated Surveillance of AMR and AMU. https://www.qjsamr.org/technical-work/technical-group-on-integrated-surveillance

Agrifood sector:

- Advocates for the establishment of prerequisites for sustainable agrifood systems, including good agricultural practices related to hygiene, sanitation, and biosecurity, as well as access to clean water, soil health, biodiversity, and nature restoration. These measures are essential to address upstream drivers of AMR linked to agricultural runoff, pesticide use, and food system practices.
- Advocated for integrated waste and water management, and community awareness within agrifood systems.
- Suggested stronger emphasis on access to safe and clean water within IPC/WASH, vaccination as a core component of IPC, and access to quality antimicrobials. In animal production systems, reducing infection risks and AMU requires integrated measures, including biosecurity, promotion of animal welfare through proven best practices in animal management and nutrition, WASH, vaccination, and strengthening animal health systems with improved access to veterinary care.
- Emphasized the importance of explicitly reflecting he environment, plant health, and broader agrifood systems within the GAP-AMR goal statement, to ensure these sectors are recognized alongside human and animal health. Respondents also underscored the need for integrated and coordinated NAPs, supported by adequate resources across all sectors, noting that while funding is available in some contexts, it has historically been concentrated in human health, leaving other sectors underfunded despite their critical roles.
- Suggested strengthening the inter-relationship with the SDGs.

Environmental sector:

- Explicitly include the environment as a key sector of AMR mitigation, aligning with UNEP evidence on its role in emergence, transmission and spread.
- Address environmental pollution from pharmaceutical industry, healthcare, agricultural, and household waste and wastewater. Recognize the role of antimicrobial residues, metals, and biocides as AMR selectors.
- Strengthen environmental surveillance and research identifying appropriate methods for environmental surveillance to monitor AMR pathogens and antimicrobial residues, supported by meaningful data and impact assessment.
- Emphasizes preventive strategies like waste and wastewater management, WASH, IPC, biosecurity, and vaccination to minimize the discharges of AMR pathogens and antimicrobials into the environment.
- Strengthen governance and regulation with development and enforcement of environmental legal frameworks, policies and regulatory standards for pollution prevention and control and minimize discharges into the environment. Emphasize international cooperation on environmental AMR prevention and control and harmonized regulations.
- Invest in innovation and sustainable alternatives to antimicrobials. Encourage R&D for green and sustainable chemicals and waste and wastewater treatment technologies. Support innovation to reduce selection pressure in the environment.
- Promote education and cross-sector capacity building, addressing communication gaps and integrating environmental science into One Health training and vice versa.
- Ensure equity for LMICs via targeted investment, technology transfer, and international support for environmental AMR interventions and infrastructure.

Human health sector:

- Suggested text is "To continue to ensure the ability to prevent, diagnose and treat infectious diseases, including drug-resistant infections and reduce the emergence and spread of AMR".
- Highlight the need to prevention, diagnose and appropriately treat infections including drug-resistant infections as indicated in the WHO people-centered approach and the WHO strategic and operational priorities to address drug-resistant bacterial infections.
- Advocacy for expanded surveillance, IPC, and addressing social determinants of health (e.g., gender, equity, disability, housing, nutrition).
- Emphasis on equity in access to treatment and diagnostics, especially in LMICs.

Animal health sector:

- Stress on reducing non-essential and non-veterinary medical use of antimicrobials in food-producing animals, building on the Codex Alimentarius Standards, including the Code of Practice to Minimize and Contain Foodborne Antimicrobial Resistance[20] and relevant WOAH guidance.
- Promotion of biosecurity, hygiene, vaccination, adequate waste and wastewater management and innovation in animal health practices and good animal husbandry practices.
- Demand for better AMS in veterinary medicine (food-producing and companion animals) and cross-sector coordination.

Education sector:

- Recommended embedding AMR topics in education (health, food and agriculture, environment), community outreach, and professional communication, curricula and training.
- Called for behavioral science approaches to promote responsible AMU and disposal.

Finance, economic, or development sector:

- Emphasized strong focus on the economic burden of AMR, especially in LMICs.
- Advocated for investment in infrastructure, healthcare resilience, sustainable agri-food systems, and environmental interventions, with equitable funding mechanisms across sectors for sustainable development.
- Proposed metrics for success and tracking progress to ensure sustainable returns on AMR investment.

Information, communication, or advocacy:

- Emphasized transparent, context-specific, multisectoral communication strategies and inclusive, evidenced based policymaking.
- Promoted awareness-raising campaigns targeting the public, healthcare providers, environmental professionals, and policymakers.

15. What is/are the emerging topic(s) that should be considered in updating the goal of the current GAP-AMR?

[20] Code of Practice to Minimize and Contain Foodborne AMR. https://www.fao.org/fao-who-codexalimentarius/sh-proxy/fr/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FStandards%252FCXC%2B61-2005%252FCXC_061e.pdf

Across all sectors:

- **One Health integration:** Strong endorsement of the One Health integration, linking human, animal, food and agriculture and environmental sectors. Integration must move beyond rhetoric to practical balanced and functional cross-sector coordination with shared goals and governance mechanisms. Importance for multisectoral and sector specific responses to AMR as highlighted in the UNGA Political Declaration.
- **Guidance on translating the GAP-AMR into national action plans on AMR**: using the GAP-AMR as a blueprint to develop, prioritize, cost, implement and monitor national action plans on AMR accompanied by operational plans.
- **R&D, digital and new technological innovation and research:** Advocates investment in for innovative research and development of alternative treatments, diagnostics, monitoring technologies, and vaccines, while recognizing the environmental impact on AMR's emergence and spread. Increasing relevance of AI, genomics, and digital surveillance tools in tracking AMR and predicting outbreaks. Technology must be made accessible and usable for both high- and low-resource settings, with stronger emphasis on advancing One Health AMR research agendas, and prioritizing implementation research to translate innovations into practice.
- **Surveillance, integrated surveillance:** Emphasis is placed on the need for coordinated efforts across sectors, effective resource allocation, and improved data harmonization and collection, data analysis and data sharing for generation of evidence-based policies. There is an urgent need to develop a global surveillance system tailored to companion animals, accompanied by capacity building to ensure systems can generate analyze, and use high-quality data effectively, building on initiatives such as the GISSA.[21]
- **Equity and social determinants:** AMR disproportionately affects vulnerable populations, including those in LMICs, children, women, migrants, people with disabilities and marginalized groups. There is a strong call to address gender inequities, socioeconomic determinants, and structural barriers in healthcare, animal health and antimicrobial access, and the environment sector. Equity must be embedded in AMR policy design, implementation, and resource allocation**.**
- **Awareness, community engagement, education and behavior change:** Raising awareness through public participation and behavioral change. AMR should be included in school and university curricula as well as pre- and professional education across sectors. Community-led solutions and culturally sensitive education programs are needed to build local ownership and understanding.
- **Governance, accountability, and political commitment:** Urgency for stronger, balanced and functional cross-sector governance, improved accountability mechanisms, and political leadership at global and national levels. Proposed creation of dedicated funding mechanisms and regular monitoring frameworks for AMR progress. Ensure sectoral-specific roles and responsibilities for accountability.
- **Access to quality antimicrobials and diagnostics:** Uninterrupted access to affordable, effective antibiotics and diagnostics remains a major concern, particularly in LMICs. Emphasis on access to new and existing antimicrobials including antifungals and antivirals, alternatives to antimicrobials, diagnostics, and vaccines, especially where resistance is emerging fastest, and their appropriate use and disposal, supported by capacity building to strengthen national and local systems to effectively prevent, diagnose and treat infections.

[21] Quadripartite One Health Integrated Surveillance of AMR and AMU. https://www.qjsamr.org/technical-work/technical-group-on-integrated-surveillance

- **Environmental dimensions of AMR:** To ensure an effective response to AMR, the environmental sector needs to be prominently incorporated, including an active presence and role into One Health governance structures, and environmental interventions fully embedded in NAPs. Robust legislation and enforcement mechanisms are needed to prevent and manage AMR in the environment, including regulating antimicrobial and AMR emissions from key economic sectors that are drivers of AMR in the environment. Preventing and reducing pollution from pharmaceutical industry, healthcare facilities, agriculture, and municipal sources is essential, alongside improvements in wastewater treatment and waste management to eliminate antimicrobial residues and resistant organisms. Address research gaps and promote knowledge generation on the environmental aspects of antimicrobial resistance, including identifying appropriate methods for environmental surveillance to analyze antimicrobial residues and resistance in the environment. Promoting innovation for detection, treatment and monitoring technologies, and environmental interventions.
- **Antimicrobial stewardship:** Strengthening and expanding AMS initiatives across human health (including implementation of the WHO AWaRe classification and AWaRe antibiotic book[22]), animal health settings and agriculture and environment sector, with emphasis on capacity building to ensure effective implementation.
- **IPC/WASH, biosecurity and expanded immunization programs:** Emphasis on infection prevention through improved WASH, IPC (including IPC core elements), waste and wastewater management along with nutrition and vaccination. Strengthening biosecurity measures in the animal health sector is also essential. Upgrading WASH infrastructure is critical not only for public health but also for reducing environmental transmission of AMR.
- **Climate change and planetary health:** Recognition that the climate crisis contributes to the emergence and spread of AMR in the environment and is a significant amplifier of AMR risks through ecosystem stress, disaster disruption, and increased infectious disease burden among others. AMR and climate change are exacerbated by human activity, including unsustainable consumption and production patterns. AMR strategies must align with climate change adaptation and mitigation, disaster risk reduction, and sustainability agendas to foster integrated approaches.
- **Clear measurable targets, M&E:** There is a call that the revision should include clear and measurable targets and accountability frameworks across One Health sectors, which are essential to address persistent challenges like inappropriate AMU and disposal and access disparities, especially in LMICs.
- **Antifungal, antiviral resistance:** Critical need to address emerging resistance in fungal and viral pathogens and emphasize appropriate use and safe disposal and management of antifungals and antivirals.
- **AMR in relation to emergencies and health security:** Recognition of AMR in conflict settings, natural disasters, pandemics, during displacement migration or in refugee camps.

Agrifood Sector:

- Calls for responsible food production practices, and agricultural pollution prevention and control, including the promotion of sustainable production approaches such as agroecology, other innovative practices, and sustainable intensification.
- Promotes antibiotic stewardship in agrifood systems and use of alternatives to antimicrobials as essential to reducing AMR burden.

[22] AWaRe classification of antibiotics for evaluation and monitoring of use, 2023. https://www.who.int/publications/i/item/WHO-MHP-HPS-EML-2023.04

- Put and emphasis on the importance of access to quality antimicrobials (including antibiotics).
- Calls for better engagement with private sector and communities.
- Highlights the role of sufficient and adequate funding of NAPs.
- Integrated surveillance inclusive of plant, feed and residues.

Environmental Sector:

- Ensure the environmental sector has defined roles in One Health governance structures and NAPs, with equitable representation, and cross-sector data harmonization.
- Develop a system to monitor antimicrobial residues and resistance in the environment, identifying appropriate methods for environmental surveillance, applying genomic-based surveillance to detect resistance genes in environmental samples when possible and appropriate.
- Strengthen national capacities, including laboratory capacity for environmental AMR monitoring, and support the integration of environmental AMR monitoring into the One Health approach. Strengthen national and regional surveillance infrastructure and establish coordinating centers as appropriate.
- Prevent and minimize wastewater and waste pollution from pharmaceutical industry, healthcare facilities, agriculture production, and municipal sources to limit environmental AMR and antimicrobial pollution. Recognize the role of climate change in accelerating AMR development and spread, linking AMR to the triple planetary crisis of climate change, biodiversity and nature loss, and pollution and waste, and strengthening these linkages into the responses, including strategies, plans and policies.
- Support innovation through AI, machine learning, and digital tools, and investment in environmental treatment technologies.
- Promote public awareness on environmental dimensions of AMR, community engagement, and private sector accountability.

Human Health Sector:

- Highlight the need to integrate AMR interventions into health sector strategies, universal health care (UHC), primary health care (PHC), health system resilience, and health security strategies, programs and budgets.
- The WHO people-centered approach to form the basis for the human health response to AMR that highlights the importance of prevention, diagnosis and appropriate treatment of infections including drug-resistant infections.
- Importance of multi-sectoral and human health governance and coordination on AMR.
- Urban health vulnerabilities and resistance in healthcare-associated infections.

Animal Health Sector:

- Emphasizes responsible AMU in companion animals, livestock and aquaculture, and development of non-antibiotic alternatives (e.g., vaccines, probiotics).
- Stronger focus on preventative measures such as biosecurity, vaccination (including autogenous vaccines), good hygiene and animal husbandry practices, improved nutrition, and use of alternatives to antimicrobials to improve welfare, reduce burden of disease and reduce the need for AMU in aquatic and terrestrial animals.
- Consideration should be included on the impact of AMR on animal welfare.
- Strengthens veterinary diagnostics and surveillance in zoonotic AMR transmission.
- Inclusion of companion animals as a distinct animal health sector when developing AMR strategies as animal health management – including use and disposal of antimicrobials - of

companion animals differs from that of food-producing animals. Consideration should be given that companion animals are often treated in private veterinary settings, live in close contact with humans as part of the household; risk for AMR transmission between these species and humans and vice-versa should not be overlooked. Furthermore, consideration should be given to the inclusion of companion animals in AMU and AMR surveillance programs as well as preventative and management actions in municipal waste and wastewater.

- Consideration should be given to the inclusion of wildlife species in AMR surveillance programs; these species are often overlooked and may help to assess the significance of the environment in AMR, and the impact of AMR on biodiversity.

Education Sector:

- Advocates for curriculum reform, capacity building, and professional training in AMR awareness and One Health principles.
- Supports interdisciplinary learning and inclusion of AMR in both formal and informal education systems.

Finance, Economic, or Development Sector:

- Highlights the cost-effectiveness of prevention versus treatment, emphasizing that inaction will have significant consequences for both human and animal health and environmental sustainability. The burden of AMR threatens not only health outcomes but also broader macroeconomic stability and sustainable development, underscoring the urgent need for sustained investment in preventive measures.
- Urges for new financing mechanisms, public-private partnerships, and mainstreaming AMR in development agendas.

Information, Communication, or Advocacy:

- Stresses the role of effective communication, transparent data sharing, and media engagement.
- Focus on amplifying marginalized voices and framing AMR as a public and planetary health crisis, while also raising awareness among the public with campaigns such as the World AMR Awareness Week,[23] starting with schoolchildren, animal owners, farmers, and other users of antimicrobial products, as well as environmental practitioners. Leverage existing databases, such as the Global Antimicrobial Resistance and Use Surveillance System (GLASS)[24] for human health and the global database on animal antimicrobial use (ANIMUSE)[25] for animal health, the International FAO Antimicrobial Resistance Monitoring (InFARM) system[26] for food and agriculture, and the GISSA[27] as advocacy and decision-making tools to support evidence-based awareness and action.

Section 3. Scope and structure of the updated GAP-AMR

In this section, we first proposed the scope and structure of the updated GAP-AMR, providing an example as;

- Introduction
- Overall goal

[23] World AMR Awareness Week. https://www.qjsamr.org/technical-work/world-amr-awareness-week
[24] Global Antimicrobial Resistance and Use Surveillance System (GLASS). https://www.who.int/initiatives/glass
[25] ANIMUSE. https://amu.woah.org/amu-system-portal/home
[26] InFARM System. https://www.fao.org/antimicrobial-resistance/resources/infarm-system/en/
[27] Quadripartite One Health Integrated Surveillance of AMR and AMU. https://www.qjsamr.org/technical-work/technical-group-on-integrated-surveillance

- Developments since 2015, progress made & new key commitments (which GAP-AMR should support achievement of)
- Strategic objectives / rationale / theory of change (i.e. how to achieve the goal)
- Framework for implementation - key role of stakeholders
- Monitoring framework, targets, and key indicators

19. **In your opinion, does the proposed GAP-AMR structure adequately cover all essential components? [Figure 5]**

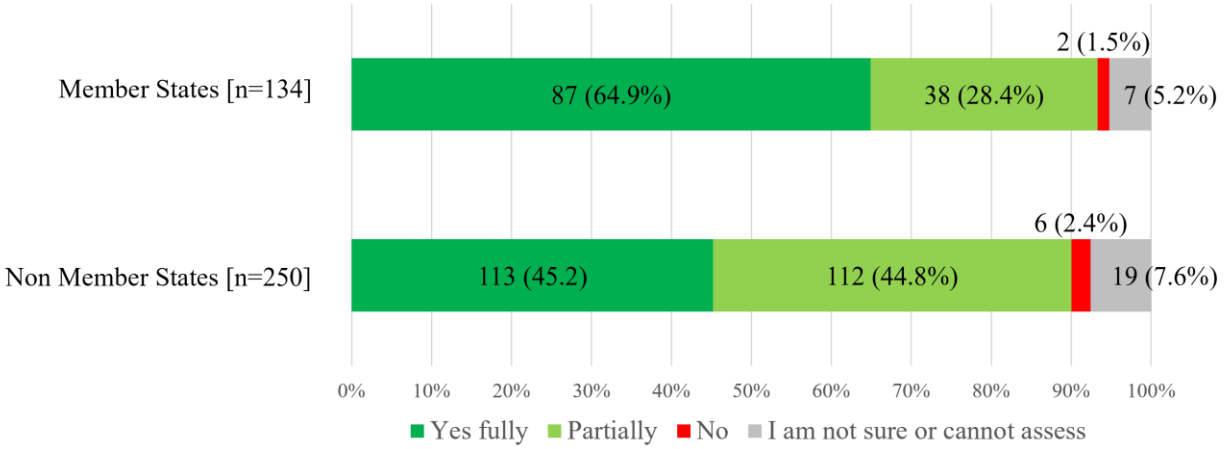

Figure 5. Level of agreement with the adequacy of the proposed GAP-AMR structure

20. Please specify any additions or modifications you would suggest.

Across all sectors:

- **Stronger integration of the One Health framework:** Responses urge equal representation of human, animal, agrifood, and environmental sectors throughout the structure. There is a call for a dedicated section on sector-specific roles and responsibilities to ensure effective coordination and implementation.
- **Governance, financing, and stakeholder accountability:** Need for a robust section on global and national governance, including clear stakeholder mapping; defined roles for governments, donors, private sector, and civil society; sustainable financing mechanisms and risk mitigation strategies.
- **Equity, access, and capacity building:** Repeated emphasis on integrating equity, gender, and social justice considerations. Importance of uninterrupted access to quality-assured, effective and affordable antimicrobials, as well as alternatives to antimicrobials, diagnostics and vaccines, especially in LMICs. Recommendations to include capacity-building support for low-resource settings.
- **Monitoring & Evaluation (M&E) enhancements:** Strong support for a more comprehensive monitoring framework with; sector-specific indicators; mechanisms for regular progress review; inclusion of success stories and barriers since 2015.
- **Environment sector integration:** The environment sector must be fully integrated into the One Health framework. Each strategic objective should include a dedicated sub-section for the environment, clearly outlining its responsibilities and contributions. Balanced representation of environmental representatives and interventions must be ensured alongside human, animal, and agrifood sectors within governance structures, implementation frameworks, monitoring and

evaluation systems, and funding mechanisms. Environmental ministries and agencies should be active participants in national coordination platforms and AMR taskforces. Dedicated, sustained funding should support the environment sector's role in research, implementation, and monitoring, as emphasized by international mandates such as 2024 UNGA Political Declaration.

- **Climate change and emerging environmental risks:** Climate change is a recognized driver of AMR emergence, transmission, and spread. Rising temperatures, extreme weather events, and ecological disruption are accelerating the development and spread of AMR. Future AMR strategies must incorporate scenario modeling and risk mitigation planning that account for environmental and climate variables. Emerging risks linked to pharmaceutical pollution, the cocktail effects of contaminants such as heavy metals and antibiotics, and wildlife-ecosystem interfaces should be identified and addressed. These risks underscore the urgent need for surveillance of AMR and antimicrobial residues, environmental regulation that addresses the drivers, sources and challenges, and forward-looking planning to understand, and prevent and anticipate how climate and environmental stressors shape AMR dynamics.
- **Cross-sector education, communication, and innovation:** Communication strategies need better alignment with incentives and behavior change. Stakeholders advocate for innovation inclusion, such as digital technologies, vaccines, diagnostics, and waste and wastewater management. Education and inter-sectoral collaboration should be explicitly addressed in the structure.
- **Need for clearer operationalization and actionable objectives:** Strategic objectives are seen as too passive or high-level; they lack measurable, actionable targets. Strong emphasis on aligning objectives with specific outcomes, incentives, and accountability mechanisms. Provide guidance on translating the GAP-AMR to national action plans with clear indicators at global and country level.

Agrifood Sector:

- Highlights misalignment in current strategic objectives with real-world incentives in agrifood systems. The updated GAP-AMR should be more focused, actionable, with a clear One Health approach, and clear accountability.
- Recommends addressing plant production and protection, regulatory gaps, and including non-traditional stakeholders (e.g., investors).
- Proposes scenario modeling and operational pathways to link human and animal health with food production.
- Recommends inclusion of clear, operational frameworks for implementation including sound governance with identified key stakeholder's roles (including non-traditional actors such as financial institutions/investors, public–private partnerships), outlining how collaboration and coordination among all One Health sectors will be facilitated and with a section on sustainable and mapped financing capacity to support countries for NAPs implementation.
- Emphasis is given to the need to clearly define available budget and funding for NAPs implementation.

Environmental Sector:

- Integration of the environment sector into One Health: The environment must be fully integrated into the One Health framework, with clear interventions and responsibilities defined within each strategic objective. It should have equal representation in governance, recognizing the crucial role that the environmental authorities and regulators play, implementation, monitoring and evaluation, and funding.

- Climate change and emerging environmental risks: Climate change should be recognized as a driver of AMR. Rising temperatures, extreme weather, and ecological disruptions contribute to resistance. Risks from pharmaceutical pollution, chemical cocktail effects, and wildlife-ecosystem interfaces must be addressed.
- Research and knowledge generation and dissemination are needed to better target environmental interventions to reduce the burden of AMR.
- Address drivers of AMR in the environment: Acknowledge key drivers of AMR in the environment such as waste and wastewater from pharmaceutical industry, healthcare, agriculture, and municipal sources. Strengthen the prevention and management, incorporate containment, promote WASH, and waste and wastewater management strategies, emphasizing the emergence, not just transmission and spread of resistance.
- Environmental surveillance and data gaps: Develop a system to monitor antimicrobial residues and resistance in the environment, identifying appropriate methods for environmental surveillance. Strengthen surveillance systems and lab capacity, especially in LMICs. Anticipate future data needs as research grows.
- Innovation & built environment interventions: Promote technologies for prevention and control of AMR in the environment such as antimicrobial surfaces, filtration systems, hygiene innovations, and passive infection control infrastructure. Leverage AI and scenario modeling in predictive tools.
- Governance, regulation & enforcement: Establish and enforce environmental regulations to minimize the discharges into the environment e.g. on antimicrobial waste and wastewater from key economic sectors and municipal systems. Recognize the key role the environmental authorities play in preventing and managing AMR, and ensuring they are part of national AMR taskforces and coordination mechanisms.
- Sustainable financing to tackle the environmental dimensions of AMR: Secure dedicated and sustained funding, referencing international mandates. Map sources from development banks, the private sector, and philanthropic organizations. Ensure the environment sector is funded across research, implementation, and monitoring.
- Risk mitigation and scenario planning: Create environmental risk mitigation plans with assigned responsibilities and timelines having assessed the significance and contribution of the environment in AMR and the most impactful interventions. Use scenario modeling to predict AMR risks involving environmental and climate variables.
- Education and communication: Increase the understanding of the environmental dimensions of AMR. Strengthen AMR-related education for environmental professionals. Promote cross-sector training to build shared understanding. Integrate environmental content into broader communication strategies.
- Define sector-specific roles and responsibilities: Clarify leadership roles and responsibilities for environmental authorities. Foster communication across sectors and mutual understanding of working methods and terminology.
- Data, metrics, and evidence gaps: Develop strong indicators for AMR in environmental contexts. Address evidence gaps and maintain flexibility to integrate new findings. Focus on developing and enhancing surveillance in low-capacity settings.
- Governance, financing & implementation support: Develop financing and capacity-building structures for the environmental dimensions of AMR. Strengthen accountability mechanisms and ensure environment sector inclusion global, regional, and national policies.

- Examples, impact, and progress tracking: Provide regional examples of effective environmental AMR responses. Apply tailored evaluation frameworks to measure environmental impact and progress.

Human Health Sector:

- Stronger emphasis on access to health services for the prevention, diagnosis and treatment of infections including drug-resistant infections. Including the importance of diagnostics and laboratory capacity.
- The need for sector specific surveillance on AMR and AMU and multisectoral coordination to harmonize data collection and analysis across sectors for policy action on AMR.
- Including new guidance e.g. AWaRe for appropriate use and antimicrobial stewardship, the human health research agenda to support implementation.
- Emphasizes need for clear sectoral accountability.
- Calls for linking national plans to the AMR Action Fund and other recent international initiatives.

Animal Health Sector:

- Argues for enhanced sectoral collaboration and clarity in animal and veterinary services.
- Proposes economic analysis inclusion and alignment with local agricultural and local communities' challenges.

Education Sector:

- Focuses on aligning communication to incentives, measurable learning outcomes, and capacity-building through multisector training and curriculum development.
- Recommends expanding hygiene-related and biosecurity protocols and waste management practices and piloting inter-sector collaboration models.

Finance, Economic, or Development Sector:

- Advocates for detailed financial planning, including donor coordination and equitable allocation.
- Urges incorporation of financial institutions' roles in promoting appropriate AMU and disposal, including antibiotics, antifungals, and antivirals if the scope of the GAP-AMR is extended.

Information, Communication, or Advocacy:

- Suggests clearer delineation of communication responsibilities across sectors.
- Stresses the need for community-level engagement and accessible, localized multisectoral advocacy tools.

Section 4. Strategic objectives

In this section, we asked whether the five existing GAP-AMR Strategic Objectives remain relevant for addressing AMR challenges over the next 5-10 years.

21. Please indicate your opinion on the statement below in relation to each Strategic Objective. "*The following GAP-AMR 2015 Strategic Objective statement have sufficient clarity, relevance and alignment to the evolving challenges of AMR across the human health, agrifood systems, animal health, and the environmental sectors to effectively drive or accelerate a One Health multisectoral global AMR response in the medium-term over the next 5 to 10 years*." [Figure 6]

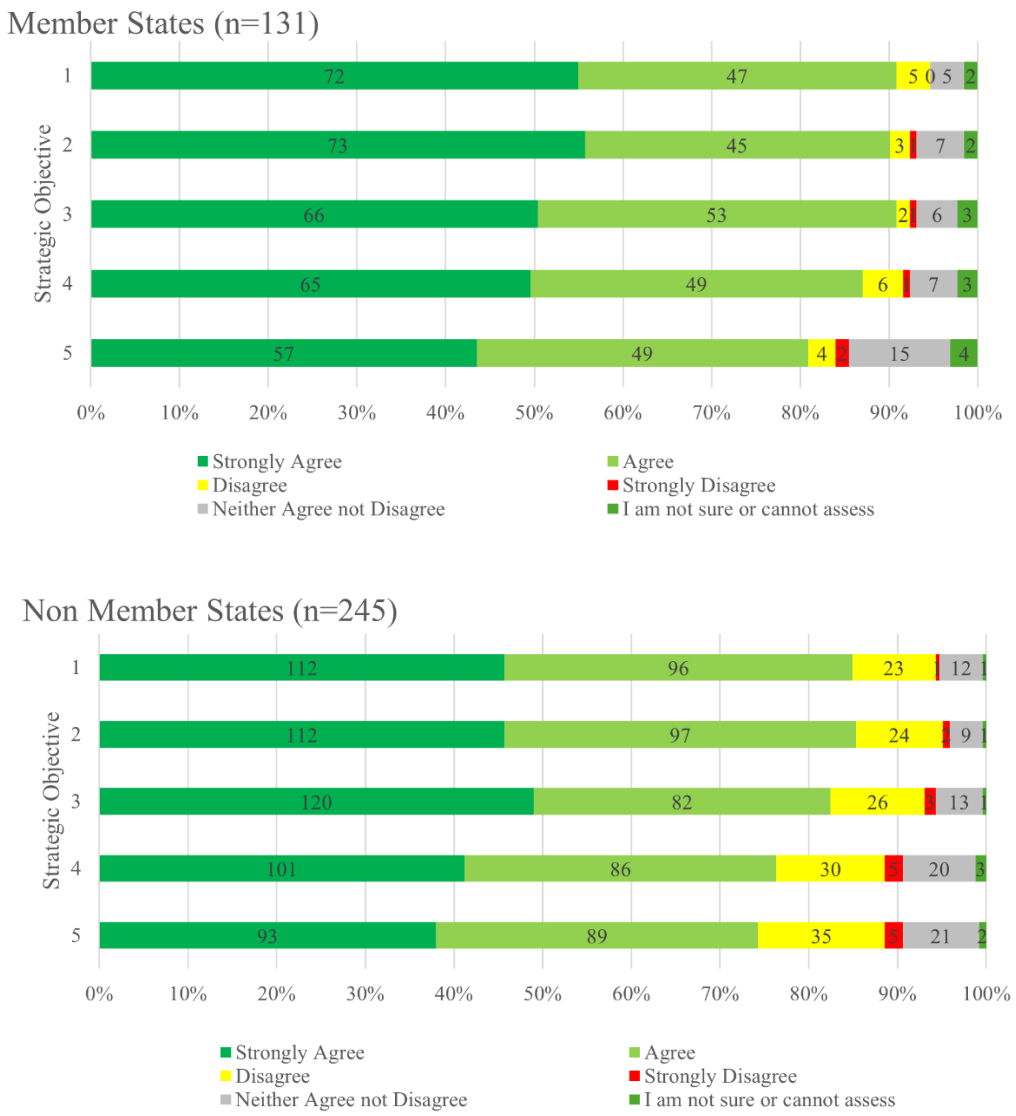

Figure 6: Respondents' opinions on the clarity, relevance, and alignment of the 2015 GAP-AMR Strategic Objectives with evolving AMR challenges across One Health sectors, disaggregated by Member States [top] and non-Member States [bottom]

22. Do you propose any revisions to any of the current GAP-AMR strategic objective(s) statement to enhance clarity or One Health approach? [Figure 7]

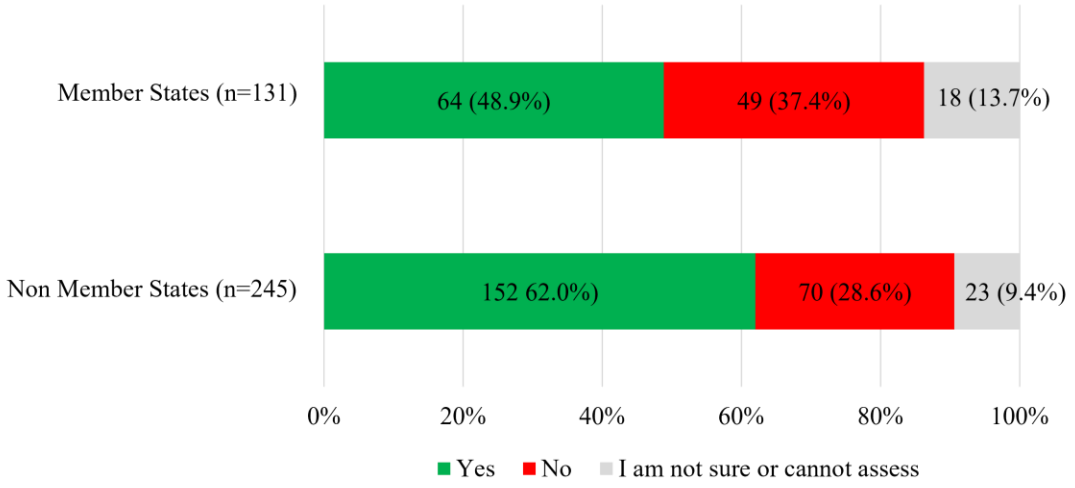

Figure 7: Responses on the need to revise current GAP-AMR Strategic Objectives for improved clarity and One Health integration

23. (If Yes to Q22) **Given that you responded Yes to the previous question, please provide specific recommendations and, if possible, supporting rationale or evidence.**

Across all sectors:

- **Strengthen One Health integration across all objectives:** The One Health approach should be fully embedded to ensure comprehensive action and accountability. Ensure all Strategic Objectives explicitly include the environment alongside human, animal, and plant health.
- **SMART objectives:** The objectives should be SMART (specific, measurable, achievable, relevant and time-bound).[28] Consider also how objectives will contribute to achieving SDGs but also other relevant goals and targets across sectors; integration could provide opportunities for identifying policies with co-benefits across multiple domains.
- **Shift from individual behavior change to collective action:** Current objectives are too individual-focused; shift toward community-driven, system-wide approaches. Leverage community leaders, peer educators, and civil society for localized and context-specific AMR awareness and behavior change. Promote education on environmental transmission routes and risks among professionals, public, and policymakers.
- **Enhance surveillance and data integration:** Should focus on strengthening sector specific surveillance system and enhance multisectoral collaboration to work towards integrated surveillance, with local relevance. Monitor AMR and antimicrobial residues in the environment. Encourage data sharing across sectors and use of digital tools and operational research to guide responses. Consider when possible and appropriate the use of whole genome sequencing for surveillance, outbreak investigation and understanding of transmission dynamics that will inform source attribution of burden of AMR circulating between sectors.
- **Emphasize IPC and WASH:** Prevention efforts should prioritize WASH infrastructure, IPC core components, vaccination, biosecurity, sanitation, and waste and wastewater management. Link these measures across all sectors, including agrifood and environmental systems.

[28] There's a S.M.A.R.T. way to write management's goals and objectives. https://community.mis.temple.edu/mis0855002fall2015/files/2015/10/S.M.A.R.T-Way-Management-Review.pdf

- **Promote equitable access to antimicrobials and medical tools:** Strategic Objective 4 should address equitable, uninterrupted access to quality-assured and effective antimicrobials, alternatives to antimicrobials, diagnostics, and vaccines, especially in LMICs, while also strengthening measures to detect, control, and prevent substandard and falsified products. Stewardship should extend beyond health facilities to include animal health, agriculture, environment, and plant health.
- **Broaden Strategic Objective 5 to include sustainable investment and innovation:** Expand focus to sustainable financing, incentives for innovation, and equitable access to existing tools. Ensure both public and private sectors are engaged in funding, developing and implementing AMR solutions.
- **Address equity, gender, and social determinants:** Incorporate social equity, gender sensitivity, and cultural factors. Recognize and address the disproportionate AMR burden on vulnerable populations including migrant populations and those affected by conflict.
- **Improve governance, accountability, and monitoring:** All objectives should include clear roles, accountability mechanisms, and sector-specific indicators. Call for governance frameworks that enable collaboration, especially in cross-sectoral coordination. Develop laws to control antimicrobial emissions and strengthen environmental accountability in AMR plans.
- **Appropriate use and disposal of antimicrobials:** Innovation, access and stewardship should be integrated into one goal, to support trade-off's in achieving these policy goals considering that balance will vary within and between countries.

Agrifood Sector:

- Integrate AMR/AMU surveillance into food and agricultural data systems, with regulatory measures and global guidance for AMU in crop production and livestock. Include guidance to prevent and reduce AMU in plant agriculture through good agricultural practices, integrated pest management, and sustainable alternatives.
- Promote food safety and nutrition as part of biosecurity strategies.
- Promote effective sanitary and phytosanitary measures, improved hygiene, biosecurity and infection prevention measures.
- Develop the economic case for sustainable investment in AMR interventions.
- Address governance and regulatory dimensions of AMR by establishing a new Strategic Objective focused on governance, regulatory frameworks, and cross-sectoral collaboration under the One Health approach.

Environmental Sector:

- Add advocacy as a tool to drive behavior change and influence policy to tackle the environmental dimensions of AMR. Raise awareness of AMR impacts and best practices among professionals, regulators, and the public, and incorporate interdisciplinary education to improve understanding of AMR challenges, drivers and sources of AMR in the environment.
- Address research gaps and promote knowledge generation on the environmental aspects of AMR. Develop a system to monitor antimicrobial residues and resistance in the environment, including identifying appropriate methods for environmental surveillance, the integration of the environmental sector into AMR/AMU surveillance, as appropriate, and the development of low-cost, representative environmental sentinel systems. Surveillance efforts should prioritize data utility at the local level, not solely for global estimation, and ensure harmonization of AMR data across sectors and countries. Capacity building for infrastructure and skilled personnel, particularly in environmental laboratories, is essential.
- Implement comprehensive IPC measures, vaccination, biosecurity, and robust waste and wastewater management across pharmaceutical industry, healthcare facilities, agriculture, and municipal systems to prevent the emergence, transmission and spread of AMR. Additionally, the

inclusion of regulation on pollution prevention and control to minimize discharges into the environment is emphasized as a critical component of infection prevention and AMR containment within a comprehensive One Health framework.

- Promote safe disposal practices for unused and expired antimicrobials to minimize environmental pollution. Strategic Objective 4 should move beyond optimizing use to also address the reduction of environmental exposure to antimicrobials and their residues. Emphasis is placed on context-specific policies and strategies, such as stewardship approaches that avoid overly restrictive measures, particularly in low-resource settings. Strengthening regulatory and governance frameworks is also critical to ensuring appropriate use and disposal of antimicrobials.
- Invest in environmental controls, such as wastewater and waste management and monitoring infrastructure, and to support scalable innovations.

Human Health Sector:

- Include greater focus on pre- and in-service education and training of health workers including behavior change interventions.
- Strengthen AMR surveillance, diagnostics and laboratory capacity. Ensure AMR/AMU surveillance analysis and integration for decision making, while considering shifting operationalization of AMU surveillance to Strategic Objective 4 for better alignment with implementation of the data for AMS purposes.
- Explicitly include immunization or vaccination in the title of Strategic Objective 3.
- Update the title of Strategic Objective 4 to reflect the broader scope of AMR health products. Use the term "appropriate use" instead of “optimize use” and emphasize the AWaRe classification and AWaRe antibiotic book[29] as key guidance for antimicrobial stewardship.
- Refocus Strategic Objective 5 to emphasize research and innovation, including implementation research and behavioral insights. Emphasize the One Health and human health AMR research agendas and the WHO bacterial and fungal priority pathogen lists.

Animal Health Sector:

- Promote biosecurity, vaccination, and responsible AMU in livestock and in companion animals.
- Go beyond monitoring by strengthening surveillance, reporting, and regulatory measures on AMU in food-producing animals.
- Improve access to rapid diagnostic tests for detection of AMR pathogens in animals.
- Reinforce surveillance systems for AMR in the animal health sector. To support evidence-based decision-making against AMR.
- Develop surveillance systems for AMU and AMR tailored to companion animals. This should include diagnostic lab networks, harmonized susceptibility testing standards, and reporting structures that reflect companion animal species and clinical realities.
- Promote research of AMR in companion animals.
- Promote surveillance and research of AMR in wildlife.

Education Sector:

- Recommend development of digital and community-based educational programs across sectors.
- Suggest integration of AMR in curricula and multisector training initiatives.

Finance, Economic, or Development Sector:

- Urge stronger economic case for AMR investment, including cost-effectiveness analysis.
- Push for financing strategies that support innovation and access in resource-limited settings.

[29] The WHO AWaRe (Access, Watch, Reserve) antibiotic book. https://www.who.int/publications/i/item/9789240062382

Information, Communication, or Advocacy:

- Stress importance of context-sensitive communication strategies.
- Encourage collaboration between government, media, and civil society to promote AMR literacy.

24. Do you think any new Strategic Objective(s) should be added to the GAP-AMR? [Figure 8]

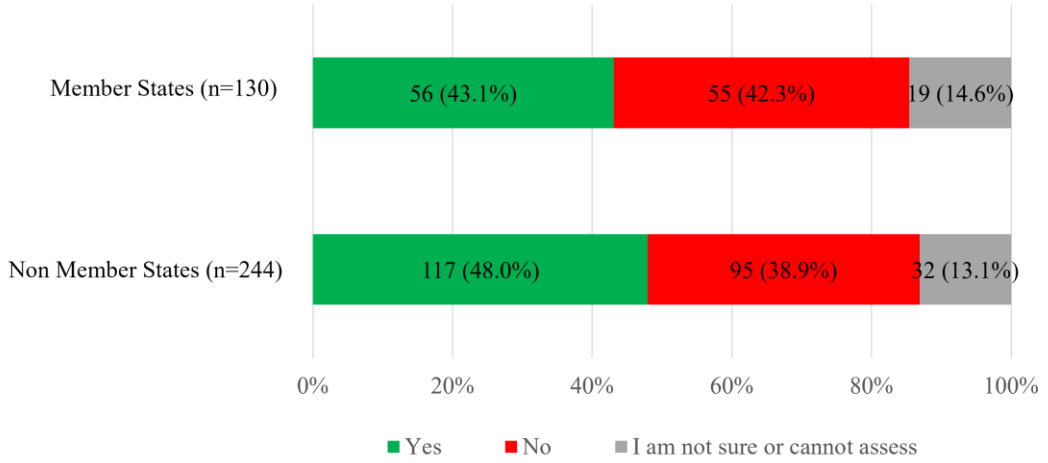

Figure 7: Respondents' views on whether new Strategic Objective(s) should be added to the GAP-AMR

25. (If Yes to Q24) **Given that you responded Yes to the previous question, please describe your proposed new objective(s) and provide any supporting rationale or evidence.**

Across all sectors:

- **Governance and coordination on AMR:** Responses recommend adding an objective focused on multisectoral governance, regulatory coherence, and stewardship policies across human, animal, environmental, and agrifood systems. Clear mandates and accountability mechanisms are seen as essential to operationalizing One Health.
- **Environmental dimensions of AMR:** A distinct objective is suggested to address environmental dimensions of AMR, such as waste and wastewater management in key sectors. Integrating climate resilience and environmental regulation is viewed as critical for a comprehensive AMR strategy.
- **Research, R&D and innovation:** There is broad support for a new objective promoting R&D for novel antibiotics, diagnostics, vaccines, alternatives to antimicrobials and new technologies to improve effectiveness of existing antimicrobials (e.g., nanotechnology) and waste and wastewater management and treatment. Innovation must be equitable and accessible, especially in low-resource settings. In addition, the need for implementation/operational multisectoral research to support GAP-AMR and NAPs implementation.
- **Sustainable financing and investment:** A strategic objective on long-term financing of a One Health response to AMR is proposed, including public-private partnerships, incentive structures, and funding access for LMICs. Stakeholders stress aligning financial tools with AMR goals and highlight the importance of leveraging existing mechanisms such as the MPTF. This also builds on the UNGA Political Declaration (Point 36) to facilitate sustainable funding for NAPs implementation, including the target of mobilizing USD 100 million to catalyze at least 60% of countries having funded plans by 2030.

- **Equity and Civil Society Engagement:** An objective is recommended to ensure inclusive policymaking, equitable access to quality and effective antimicrobials, alternatives to antimicrobials, vaccines and diagnostics, adequate resource allocation and community participation, especially among marginalized populations across sectors, with a special focus on LMICs and their appropriate use and disposal.

Sector specific:

- **Agrifood sector:** Calls for strengthened biosecurity, oversight of AMU, and food safety surveillance; improved disease management, prevention, antimicrobial stewardship, and promotion of good practices; integration of environmental and agrifood systems into the global AMR response; and inclusion of an additional Strategic Objective on M&E.
- **Environmental sector**: New Strategic Objectives on equitable implementation and LMICs participation was suggested.
- **Human health sector:** New Strategic Objective on equitable access to diagnostics and laboratory strengthening (or a clear sub-heading of Strategic Objective 2 or 4) was suggested. Stakeholders also emphasized embedding AMR into broader health sector plans and strategies including UHC and PHC, pandemic preparedness and response, and broader health system strengthening.
- **Animal health sector:** Advocate for stronger health systems and cross-border surveillance.

26. (If Yes to Q24) **Please suggest the outcomes or actions the new objective(s) will aim to achieve? You may also reference a global or national example where this has been successfully integrated, if applicable.**

- **Governance and coordination:** Responses propose establishing multisectoral One Health coordination platforms with clear legal mandates, accountability mechanisms, and defined roles across human, animal, environmental, and agrifood sectors. Examples include Tanzania's Fleming Fund-supported lab capacity strengthening and Pakistan's governance-driven AMR action plan.
- **Environmental management and monitoring:** Environmental AMR management requires preventative actions in economic sectors that are main drivers of AMR in the environment, robust regulatory frameworks, research and knowledge generation and dissemination, awareness raising, and surveillance of AMR and antimicrobial residues in the environment, along with monitoring emissions from pharmaceutical industry, healthcare facilities, and agriculture sites. Countries like the UK and Spain offer models for environmental monitoring and risk mapping. Safe disposal of unused antimicrobials and sustainable waste management are critical, supported by clear guidelines and take-back systems. Integrating the environmental dimensions of AMR into national budgets and governance frameworks, including through public-private partnerships, is essential. Public awareness, civil society engagement, and inclusive One Health coordination should be strengthened. Examples from Malaysia, Thailand, Pakistan, and the EU highlight effective environmental AMR strategies and inter-agency collaboration at national and regional levels.
- **Equity, community engagement, and access:** Proposed actions include enhancing gender and health equity across sectors, engaging civil society, local communities, stakeholders from human, animal, plant, and environmental health in AMR governance; and ensuring equitable access to antimicrobials, diagnostics, vaccines and WASH services, and other essential tools, particularly in LMICs.

- **Research, development, and innovation:** Stakeholders call for increased investment in R&D for alternatives to antimicrobials and innovative technologies, like ambient disinfection.
- **Sustainable financing:** Actions include embedding AMR funding into national budgets, developing investment guidelines for the private sector, and promoting long-term financial sustainability through public-private partnerships and donor alignment.

Section 5. Technical content

In this section, we first assessed the level of agreement with the statement: "*This GAP Strategic Objective adequately reflect the evolving challenges and emerging issues of AMR across human health, agrifood systems, animal health, and the environment; and supports a One Health approach*" for each strategic objective. [**Figure 9**]

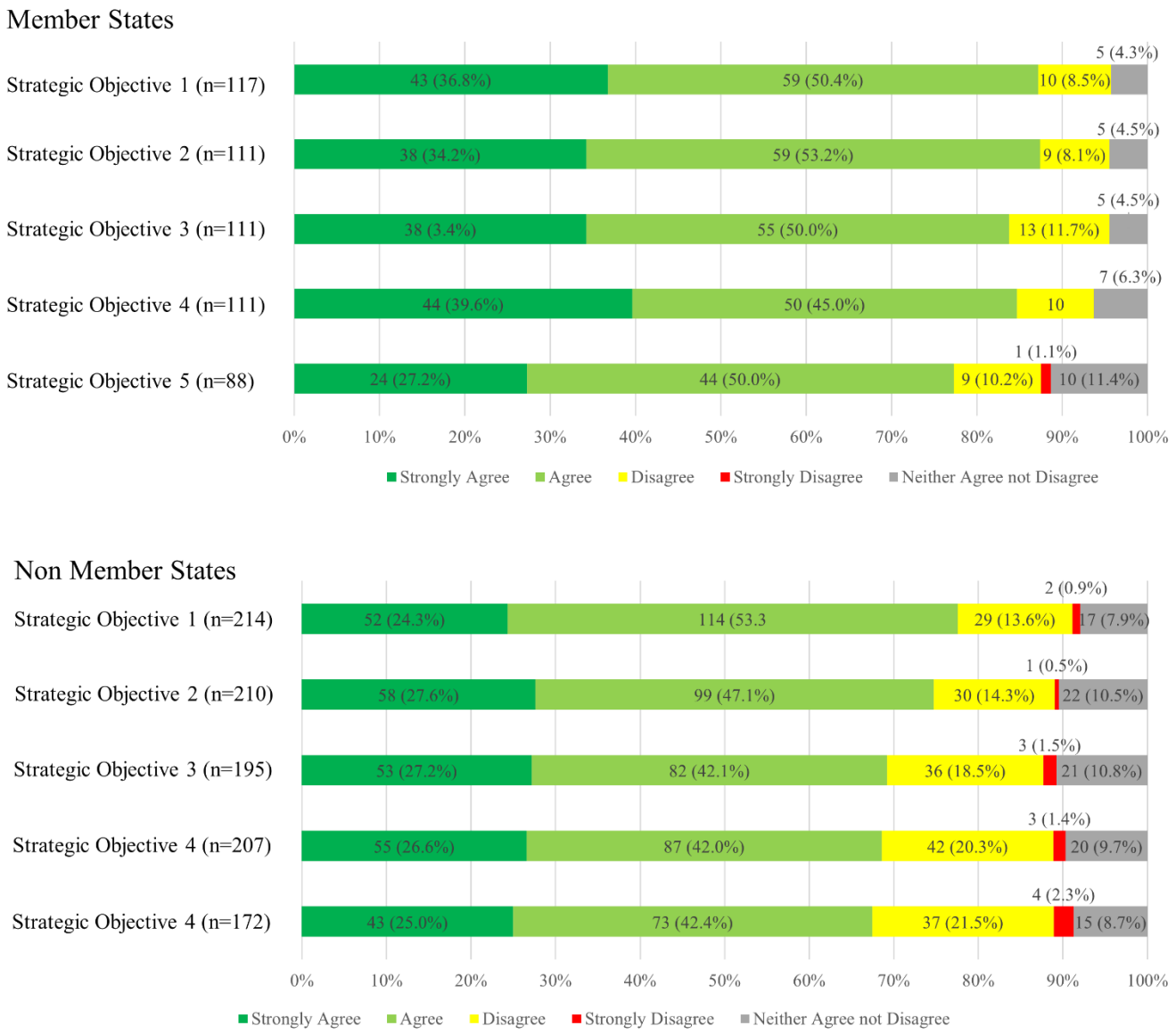

Figure 9. Agreement on whether each GAP-AMR Strategic Objective reflects evolving AMR challenges and supports a One Health approach, by Member States [top] and non-Member States [bottom]

Next, we posed the following question for each Strategic Objective.

Please provide your suggestions for the technical content under this strategic objective. For each suggestion, include the rationale and supporting evidence.

- What specific new content is to be **added**?
- What content is to be **modified or rephrased**?
- What content is to be **removed**?
- Is there any content that remains relevant but **may align better with another strategic objective**? (please describe specific content and indicate to which strategic objective the identified content better aligns)

Strategic Objective 1

Improve awareness and understanding of antimicrobial resistance through effective communication, education and training

Across all sectors: Respondents propose enriching the objective by shifting from passive awareness to behavior-change communication rooted in behavioral science, equity, and social determinants of health. There is a strong call for participatory education approaches and tailored training and messaging to improve understanding across diverse stakeholders, particularly in LMICs. Emphasis is placed on a clear One Health approach and broader multisectoral stakeholder engagement, including civil society, youth, AMR survivors, media, and decision-makers such as politicians, to secure wider commitment and coordinated action.

Suggestions include promoting interdisciplinary training programs that bring together professionals from human health, animal health, agrifood systems, and the environmental sector, and integrating behavior change frameworks into awareness and training activities. New content includes using digital technologies, culturally relevant communication, and incorporating AMR education into school curricula, continuing professional development, and community outreach. Environmental messaging, youth engagement, and antifungal resistance, with relevant One Health considerations, are also highlighted. Messaging should be clear, locally tailored, and outcome oriented. Vague language, outdated data, and top-down communication models should be replaced by inclusive and evidence-based strategies. Some elements, such as surveillance training and behavior change monitoring, may align more closely with Strategic Objectives 2 and 5.

Agrifood Sector: Respondents propose strengthening messaging on prerequisites for sustainable agrifood systems, including preventative measures such as vaccination, and highlight how surveillance can inform interventions. Broaden the scope of education to cover understanding of infectious diseases as well as alternatives to antimicrobials. Promote interdisciplinary training programs that bring together professionals from health, veterinary, agriculture, and environmental fields aligned with the Reduce the Need for Antimicrobials on Farms for Sustainable Agrifood Systems Transformation (RENOFARM) initiative.[30] Tailor these training programs to the realities and needs of farmers, agricultural workers, veterinarians and other veterinary health professionals and paraprofessionals, as well as community animal and plant health workers. Training should emphasize responsible AMU, biosecurity measures, and best practices for animal and plant care and health, while addressing the practical challenges faced within these sectors. Furthermore, the role played by AMR survivors (particularly those affected by infections linked to food systems) could be highlighted to emphasize the human and community impacts of AMR within agrifood systems. Messaging should promote behavior change and practice shifts among producers, with tangible examples such as feed reformulation, alternatives to growth promoters, and proper record-keeping. Emphasis on integrating AMR the university curricula, public communication programs. Remove any content that implies a top-down communication model without feedback or dialogue mechanisms.

[30] Reduce the Need for Antimicrobials on Farms for Sustainable Agrifood Systems Transformation. https://www.fao.org/antimicrobial-resistance/background/fao-role/renofarm/en/

Environmental Sector: Calls for the explicit inclusion of environmental agencies, regulators, waste managers, and pharmaceutical manufacturers, among others, in an active involvement to promote environmental action to reduce AMR burden acknowledging the role the environment plays in emergence, transmission and spread of AMR. The One Health approach should be more clearly articulated to include environment alongside human and animal sectors in a balanced manner. On awareness and education efforts, there is a strong push to broaden target audiences to include industrial sectors contributing to AMR, and to raise public awareness about the environmental dimensions of AMR, including sources of pollution and impact, and solutions to prevent and manage AMR in the environment. Educational content should address environmental dimensions of AMR, including sustainable environmental practices, beginning at the primary school level and continuing into professional training across relevant sectors. Messaging strategies must be localized and culturally relevant, especially in rural and peri-urban communities, utilizing oral storytelling, religious networks, and local languages. Respondents emphasize shifting from individual responsibility to systemic and policy-level change, advocating for education that informs policymakers about regulatory tools to reduce environmental drivers of AMR. Digital campaigns and cross-sector training are also recommended to enhance environmental AMR literacy. Emphasis on integrating AMR the university curricula, public communication programs. Remove any content that implies a top-down communication model without feedback or dialogue mechanisms.

Human Health Sector: There is a call for stronger pre- and in-service education for healthcare professionals, using a competency-based approach across areas like IPC and AMS. Education should be informed by behavioral science, with measurable outcomes and a focus on behavior change. Messaging must reflect real-world issues such as antimicrobial misuse and include voices from informal caregivers and frontline workers. Communication should be simplified and relatable, avoiding jargon.

Animal Health Sector: New content should focus on participatory education and awareness raising for animal health professionals including community-based veterinary services, veterinarians and paraprofessionals, animal owners, keepers and breeders emphasizing antimicrobial stewardship, biosecurity measures, vaccination programs, good animal husbandry practices, alternatives to antimicrobials and AMR consequences in both animals and humans. It is essential that education and training programs are tailored to the realities and needs of the target audience in their respective regions. Animal health professionals should be involved in the education of their clients.

Strategic Objective 2

Strengthen the knowledge and evidence base through surveillance and research

Across all sectors: This objective should be reframed to emphasize actionable systems based One Health integration, highlighting the development and coordination of integrated surveillance frameworks, based on strong sector specific surveillance systems. These should promote harmonized data sharing and standardized methodologies across human, animal, agrifood, and environmental sectors through cross-sectoral platforms, with public and private stakeholder engagement. Surveillance systems must link AMR and AMU data to better understand drivers, assess policy impacts, and guide investment decisions. Respondents call for inclusion of environmental, socioeconomic, and cultural determinants, disaggregating data by gender, sex and other social determinants to address vulnerable groups; tracking of non-pharmaceutical drivers (e.g., textiles, climate-sensitive vectors); and participatory, community-engaged approaches. Emphasis is placed on behavioral and implementation science to understand facilitators and barriers to responsible AMU and access to diagnostics, alternatives to antimicrobials, and vaccines. Strengthening laboratory capacity and standardizing antimicrobial susceptibility testing protocols, alongside building epidemiological and data analysis capacity, is essential especially in LMICs. Surveillance should incorporate real-time technologies, including digital health records, AI, whole genome sequencing, and genomic tools for outbreak detection and transmission mapping. Current frameworks should replace outdated agendas, and attention to anti-fungal and antiviral resistance must be

increased. Commitments to national and regional data-sharing agreements and stewardship protocols are also needed to build sustainable, integrated One Health surveillance and research communities.

Agrifood Sector: Respondents called for surveillance of AMR and antimicrobial residues in water, soil, and waste linked to agrifood systems. Emphasis on harmonizing data across sectors, integrating climate-linked and genomic surveillance, and involving producers in participatory research. Suggests AMR and AMU data to be utilized to measure the impact of the interventions and investment to generate evidence to inform policy and decision making. Update outdated language to reflect WHO's GLASS,[31] InFARM,[32] WOAH's ANIMUSE,[33] and GISSA;[34] shift from "data sharing" to concrete mechanisms like harmonized templates and cross-sector reviews. Emphasis is given to the need for greater support for integrated surveillance, following international standards (Codex Alimentarius, WOAH) and on building national surveillance systems by laboratory and epidemiology capacity building using tools like FAO Assessment Tool for Laboratories and AMR Surveillance Systems (FAO-ATLASS)[35]. Remove overly narrow focus on clinical resistance that do not reflect One Health priorities. Remove paragraph 34 that is no longer relevant.

Environmental Sector: Respondents emphasized the need to build surveillance system of AMR and antimicrobial residues in the environment and robustly integrate environmental dimensions into AMR surveillance as appropriate. Respondents call for standardized monitoring of antimicrobial residues, resistant microorganisms, and genes in environmental media such as water, soil, and effluent, alongside the adoption of tools like wastewater-based epidemiology to identify AMR hotspots. There is a strong push to embed environmental data fully within One Health surveillance systems, supported by interoperable data platforms and harmonized sampling protocols. Respondents advocate for increased research into ecological transmission pathways, climate-sensitive surveillance, and the development of innovative tools such as AI, biosensors, and digital mapping platforms. The importance of R&D for alternative interventions, like phage therapy and antimicrobial adjuvants with environmental applications, is also stressed. The feedback urges a shift from clinical-centric narratives, calling instead for a balanced, cross-sectoral focus that recognizes pollution, poor waste management, and pharmaceutical discharge as key environmental drivers. There is also a demand to strengthen environmental surveillance capacity in LMICs and to incorporate legal mandates and accountability mechanisms.

Human Health Sector: Respondents emphasized prioritizing data sharing over system integration in surveillance, while recognizing the importance of national autonomy in integration approaches. There is support for expanding AMR surveillance beyond tertiary facilities, with calls to ensure data is nationally representative and aligned with global targets, such as WHO's GLASS reporting.[36] Update the language aligned with WHO GLASS reporting and UN political declaration text: "*All countries to report quality surveillance data on AMR and antimicrobial use by 2030 through existing global surveillance systems, including the Global Antimicrobial Resistance and Use Surveillance System (GLASS)",* and the commitment *"to support collection of nationally representative data on prevalence, AMR patterns, re-emerging disease surveillance, and mortality and morbidity attributable to AMR, as well as to share relevant information on emerging trends to inform decision-making at all levels,".*

Countries should work toward establishing nationally representative AMR surveillance systems to collect data on AMR prevalence, resistance patterns, and AMR-related morbidity and mortality. These surveillance systems

[31] Global Antimicrobial Resistance and Use Surveillance System (GLASS). https://www.who.int/initiatives/glass
[32] InFARM System. https://www.fao.org/antimicrobial-resistance/resources/infarm-system/en/
[33] ANIMUSE. https://amu.woah.org/amu-system-portal/home
[34] Quadripartite One Health Integrated Surveillance of AMR and AMU. https://www.qjsamr.org/technical-work/technical-group-on-integrated-surveillance
[35] FAO Assessment Tool for Laboratories and AMR Surveillance Systems (FAO-ATLASS). https://www.fao.org/antimicrobial-resistance/resources/tools/fao-atlass/en/
[36] Global Antimicrobial Resistance and Use Surveillance System (GLASS). https://www.who.int/initiatives/glass

should provide a comprehensive and accurate picture of the AMR burden across the entire country, rather than data limited to isolated hotspots or well-resourced facilities. Include the need to monitor AMR-related mortality (as per political declaration target) at both global and national levels, and the need for country-level AMR burden estimates generated by direct reporting and statistical modeling. While some propose including laboratories and diagnostics within this objective, others argue they should remain standalone or under Strategic Objective 4 due to the importance of strengthening diagnostics and laboratories to support clinical care.

A possible move of AMU surveillance to another Strategic Objective should be considered, given that the implementation and use of these data align more closely with AMS efforts and responsibility at the country level. However, the importance of integrating AMR and AMU surveillance data for decision-making remains vital in this objective, highlighting the need to maintain alignment with AMR surveillance for comprehensive insights. Suggestions to emphasize innovative models and efficient data use were tempered by concerns over ambiguous terms such as "sustainable." The role of surveillance in informing treatment guidelines and evaluating NAPs was affirmed.

Animal Health Sector: Recommends tracking AMR in informal animal production systems, linking AMU data with AMS programs, and emphasizing zoonotic risks in surveillance planning. Consider research needs to identify risk factors for infectious diseases in animals, considerations on the correlation between animal welfare indicators, determinants and infectious disease incidence, patterns and extent of AMU in food-producing animals, biosecurity, animal husbandry and management practices and vaccines that reduce risk of infectious diseases and the need for veterinary medical and non-veterinary medical use of antimicrobials (e.g., growth promotion). Promote active participation of countries in global monitoring of AMU through ANIMUSE[37] and in the use of AMU data to inform national AMR surveillance programs and policymaking on AMR in animals. Promote adoption of WOAH's international standards for harmonization of monitoring of AMU and surveillance of AMR in animals. Modify references to reflect underrepresented rural settings, participatory AMU and AMR monitoring and surveillance, and One Health coordination; include veterinary animal health data governance. Extend AMU data collection to companion animals in item 40. Strengthen AMR surveillance and research in companion animals and wildlife.

Strategic Objective 3

Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures

Across all sectors: This objective should be expanded to reflect a comprehensive, One Health approach to the prevention of infection, encompassing human, animal, plant, and environmental health. Respondents call for the inclusion of climate-sensitive IPC strategies, biosecurity, resilient WASH infrastructure, and vaccination particularly in LMICs and high-risk settings. IPC should extend beyond clinical environments to homes, farms, informal settlements, and human-animal interfaces such as wet markets and households where zoonotic transmission risk is high. Community-driven sanitation programs and waste management systems are essential components, alongside animal welfare and responsible animal husbandry practices. Emerging challenges, including antifungal and antiviral resistance, airborne transmission, and the effects of climate change such as extreme weather events on infection and AMR dynamics, should be addressed. Equity, gender, and behavioral dimensions must be integrated to ensure inclusive and effective interventions, especially among vulnerable populations. Alignment with global frameworks, such as the WHO Global IPC Strategy,[38] WASH guidelines,[39]

[37] ANIMUSE. https://amu.woah.org/amu-system-portal/home
[38] Global strategy on infection prevention and control. https://www.who.int/publications/i/item/9789240080515
[39] Water, sanitation and hygiene (WASH). https://www.who.int/health-topics/water-sanitation-and-hygiene-wash#tab=tab_1

and the Immunization Agenda 2030,[40] is recommended. Strengthening community engagement and promoting behavior change are also key to sustaining infection prevention measures and reducing AMR risk across sectors.

Agrifood Sector: Highlight the need for stronger biosecurity (including vaccination) and animal welfare standards to reduce AMU, enhanced nutrition, food security, and sound environmental health. Improved biosecurity in food production environments and addressing AMR risks from fecal and industrial pollution are critical. Suggested integration of alternatives to antimicrobials and the establishment of clear targets for IPC and biosecurity measures in livestock systems. The use of preventive measures can also help secure productivity during the phase-out of antimicrobials as growth promoters, in both plants and livestock. Promote a multidisciplinary approach to infection prevention and support investment in research and development to encourage diversification of alternatives to antimicrobials. Strengthen technical assistance for establishing the prerequisites for sustainable agrifood systems, including good agricultural practices. Propose adding the RENOFARM initiative.[41] Suggest refining language in Paragraph 38 to prioritize animal welfare, prudent and responsible use of antimicrobials, and infrastructure-based sanitation. Recommend expanding the term "sanitation" to include veterinary and plant systems. Use the term "antimicrobials" instead of "antibiotics" where appropriate (referencing paragraphs 35, 36, 37, and 38).

Environmental Sector: Call for the explicit inclusion of pollution control, and waste and wastewater waste management as key components of AMR prevention. Respondents urge regulation of waste and wastewater from critical AMR risk sources including pharmaceutical industry, healthcare, agriculture, and municipal systems. The objective should also promote cost-effective, climate-resilient infrastructure solutions, particularly WASH systems and biosecurity measures in farms and food production, while addressing gaps in healthcare, animal health, and food system infrastructures. A stronger One Health framing is recommended to ensure IPC measures extend beyond clinical settings and fully integrate environmental drivers and non-clinical AMR risks. Revisions should also emphasize responsible disinfection practices, including cautious biocide use to prevent toxicity and co-selection for resistance, and align IPC policies with sustainability goals. Some mentions of generic water safety and hospital-focused IPC should be trimmed unless tailored to specific sectors. Some elements, such as financing environmental actions, infrastructure, research, AMR surveillance in environmental settings, and training on sustainable practices, are seen as more appropriate for other objectives like Strategic Objectives 5, 2, or 1, respectively. Climate change impacts on AMR, climate-resilient infrastructure, and environmental protection from biological and chemical waste should be integrated.

Human Health Sector: Call for a shift from hospital-focused IPC to integrated approaches across the care continuum, including informal settlements, long-term care, and primary health facilities. Core components of the infection prevention including WASH infrastructure, waste management in healthcare facilities, immunization, and active IPC programs supported by adequate staffing and resources. Immunization should be explicitly referenced as a tool for AMR mitigation. Content should also address urban sanitation, oral and menstrual hygiene, and community engagement.

Animal Health Sector: Respondents suggest the content concerning disease prevention in animal health is insufficient. Participants recommended stronger emphasis on preventative measures for both companion and food-producing animals such as IPC (animal health settings), biosecurity, vaccination (including autogenous vaccines), use of alternatives to antimicrobials, water sanitation, good animal husbandry practices, including implementation of animal welfare standards and adequate housing and nutrition, and proper waste management to strengthen resilience to infectious diseases, where applicable. Urged inclusion of antimicrobial waste

[40] Immunization Agenda 2030: A Global Strategy to Leave No One Behind. https://www.who.int/teams/immunization-vaccines-and-biologicals/strategies/ia2030

[41] Reduce the Need for Antimicrobials on Farms for Sustainable Agrifood Systems Transformation. https://www.fao.org/antimicrobial-resistance/background/fao-role/renofarm/en/

management and recognition of the role of animal health plans in infection prevention in animal populations. Calls for international recommendations from WOAH and FAO on use of vaccines in animals. Support development and use of AMU benchmarking and reduction targets to monitor effectiveness of preventative measures.

Strategic Objective 4

Optimize the use of antimicrobial medicines in human and animal health

Across all sectors: This objective should be expanded to reflect a comprehensive system enabled One Health approach to appropriate and equitable access to and use of antimicrobials, encompassing human, animal, plant, and environmental sectors. Respondents strongly support scaling up AMS programs beyond formal healthcare to include informal markets, aquaculture, crop production and environment sector. Stewardship must be supported by strong legislative and regulatory frameworks to control the marketing, supply chain management, and use of antimicrobials, including online and over-the-counter (OTC) sales, and promote safe disposal of expired or unused antimicrobials. Equitable access to health services (human and animal health), quality-assured antimicrobials, rapid, low-cost diagnostics, and alternatives to antimicrobials (e.g., vaccines, probiotics, phage therapy) are critical, especially in LMICs, and should be aligned with UHC and efforts to address intellectual property and supply chain barriers. Stewardship should be guided by AMU data, surveillance, benchmarking, and social science insights, with time-bound targets aligned to global commitments (e.g., 2024 UNGA Political Declaration on AMR). Respondents call for inclusion of antifungal and antiviral stewardship, environmental contamination monitoring and management, AMR and antimicrobial residues surveillance, and substandard and falsified medicine tracking. The objective must emphasize sustained institutional and workforce capacity, community-based interventions, and actionable communication of surveillance data. Alignment with FAO WHO, WOAH guidance, standards and recommendations, and other international AMU/AMR guidance is essential.

Agrifood Sector: Emphasizes expanding AMS to plant, aquaculture, and livestock systems; equitable access; standardized AMU data; microbiome monitoring; and inclusion of alternatives to antimicrobials and vaccines. Highlights that the technical content should be expanded to explicitly include agrifood systems, aquaculture, and the environment as critical components of antimicrobial stewardship. Emphasizes the importance of robust regulatory frameworks and suggests that legislation should be strengthened across all stages of the antimicrobial lifecycle. Underscore that the distribution of medically important antimicrobial agents should only be done on the prescription of a veterinarian, or order from a plant/crop health professional, or other suitably trained person authorized in accordance with national legislation. Promote the development and use of safe and effective alternatives to antimicrobials and support the phased reduction and eventual elimination of their use as growth promoters, in line with Point 69 of the UNGA Political Declaration, the Codex Alimentarius, and standards, guidance and recommendations of WOAH. Suggests amending the headlines to include the whole agriculture sector. Ensure commitment of private sector (e.g., food industry) on implementing public responsible AMU policies and report on implementation and impact of these policies for accountability and transparency.

Leverage public–private partnerships with agrifood value chain actors to promote innovation and mobilize financing for sustainable farming practices and alternatives to antimicrobials. Advocates clearer targets, stronger accountability, and equity-sensitive language; prioritizes context-adapted stewardship and data integration. Modify the aim to strengthen AMS through improved access, accountability, and equity. Update evidence-based treatments with local data on AMR and enhance support for LMICs. Integrate environmental and supply chain controls, and enforceable regulations on AMU in agriculture including plants and plant production. Better reflect the One Health, cross-sectoral approach with clearer language on prudent use, and measurable reduction targets in agrifood systems. Ensure updating terminology (e.g., OIE to WOAH). Include commitment to develop further global guidance to prevent and reduce the use of antimicrobials in plant production and protection.

Environmental Sector: Emphasizes the need to incorporate safe and sustainable disposal of unused antimicrobials across healthcare, agricultural, and household settings. Respondents call for low-cost disposal methods, particularly in LMICs, and advocate for clear regulatory guidance and take-back schemes to manage pharmaceutical waste. The inclusion of Extended Producer Responsibility for pharmaceutical companies is recommended to ensure accountability throughout the antimicrobial lifecycle, from production to disposal. Respondents also stress the importance of integrating environmental data with AMU data to inform feedback mechanisms and stewardship strategies. The language of the objective should shift from an individual-centered approach to one that highlights system-level responsibility, recognizing environmental prevention measures as foundational to appropriate AMU and disposal. Stewardship should be reframed through a One Health lens, acknowledging the unequal capacities between sectors and linking access and use policies to environmental health. The objective's title and content should be revised to clearly include environmental systems, while vague or non-accountable phrases like "encourage appropriate use" should be replaced with more actionable language. Overly technical or redundant content should be streamlined to better align with environmental stewardship priorities and create coherent, cross-sectoral strategies for appropriate use and disposal of antimicrobials.

Human Health Sector: Strengthening AMS activities at all levels of health care including primary care, using the Access, Watch and Reserve (AWaRe) classification and the AWaRe antibiotic book[42] as foundations to guide appropriate use efforts. Include the Member States committed to the 70% Access target from UNGA 2024. Strengthen access to and appropriate use of 'Access' antibiotics, affordable diagnostics, and quality-assured vaccines. Stronger regulatory enforcement is needed to curb inappropriate OTC sales, supported by stepwise implementation strategies. Surveillance of AMU should be central to this objective, not only to monitor overuse and misuse but also to detect access gaps and guide clinical decision-making and policy. The WHO Model Lists of Essential Medicines (EML)[43] and WHO AWaRe classification should underpin antimicrobial selection and appropriate use. There is also a call to scale up affordable point-of-care diagnostics, especially in low-resource settings and for priority conditions like sepsis and childhood febrile illness. Countries should strive to implement the WHO Essential Diagnostics List,[44] establish robust laboratory networks and referral systems, and ensure diagnostic quality through standardized protocols, quality assurance systems, and external quality assessments. Strengthening laboratory information systems and diagnostic stewardship is essential for effective clinical decision-making

Animal Health Sector: Recommends integrating AMS across animal health sectors; phasing out the use of antimicrobials for growth promotion; veterinary regulatory reform; behavior change; and multisector capacity-building. Improve access to quality, essential veterinary medicinal products, diagnostic tools and veterinary services and suitably trained animal health professionals, particularly in rural areas and vulnerable populations (e.g., nomadic pastoralists, backyard farmers) to reduce risk of misuse of antimicrobials, including OTC and resorting to substandard and falsified veterinary products. Include considerations for responsible AMU in companion animals and strengthening of AMS in the animal health sector (e.g. international standards, recommendations and guidelines [Item 39]).

Strategic Objective 5

Develop the economic case for sustainable investment that takes account of the needs of all countries, and increase investment in new medicines, diagnostic tools, vaccines and other interventions

[42] The WHO AWaRe (Access, Watch, Reserve) antibiotic book. https://www.who.int/publications/i/item/9789240062382
[43] WHO Model Lists of Essential Medicines. https://www.who.int/groups/expert-committee-on-selection-and-use-of-essential-medicines/essential-medicines-lists
[44] WHO Essential Diagnostics List. https://www.who.int/news/item/19-10-2023-who-releases-new-list-of-essential-diagnostics--new-recommendations-for-hepatitis-e-virus-tests--personal-use-glucose-meters

Across all sectors: This objective should emphasize sustainable, country-led investment in AMR mitigation across the One Health spectrum, with a particular focus on LMICs. Respondents call for innovative, field-adaptable and scalable financing models, including push/pull incentives, delinkage, blended finance, and public-private partnerships, to support R&D, equitable access to antimicrobials, diagnostics, vaccines, and alternatives to antimicrobials (e.g., probiotics, phage therapy). Investment strategies should also cover infrastructure (e.g., WASH, hygiene-integrated systems, vaccine production, waste and wastewater management), capacity building, and strengthened biosecurity. The objective should support economic case development, incorporating the cost of inaction, affordability, and long-term impact analyses to attract sustainable financing from governments, donors, and financial institutions.

Respondents also recommend financing AMR surveillance programs and behavior change initiatives and investing in One Health coordination platforms with sustained public funding. Transparency, regular audits, and accountability mechanisms in fund disbursement are essential. There is a strong call to recognize AMR as a material financial risk and to integrate AMR into national budgeting and public financial management systems. Alignment of regulatory systems across countries can help improve access to essential health products and technologies. Digital tools and modeling should be used to prioritize investments and guide resource allocation. Outdated or duplicative content should be streamlined to maintain clarity and focus.

Agrifood Sector: Proposes investments in animal husbandry, waste management, antifungal resistance, and smallholder support. Suggests economic case include farm-level benefits and mitigation of resistance drivers beyond antimicrobials. Suggests mainstreaming AMR into other relevant global and national policies and harmonize regulatory frameworks. Promotes mechanisms for cross-sectoral funding coordination to avoid fragmented investments. Supports calls for comprehensive economic assessments to evaluate the cost-effectiveness of prevention. Highlight access, affordability, capacity building, and long-term returns on prevention in agriculture. Recommend broader framing beyond pharma, to include animal welfare and ecosystem health, including plant health. Prioritize sustainable, long-term financing mechanisms over one-time investments to ensure continuity and scalability. Add economic burden data across human, animal, and agrifood systems using a One Health lens. Remove overly technical or pharmaceutical industry-specific language that may narrow the focus.

Environmental Sector: Stresses the importance of explicitly incorporating environmental drivers and mitigation strategies into AMR investment planning. Calls for targeted investment in pollution prevention and control, wastewater management and treatment, and waste management across key economic sectors main drivers of AMR in the environment, pharmaceutical industry, healthcare, agriculture, and municipal, as essential components of AMR prevention. Respondents emphasize integrating environmental considerations into One Health financing strategies, ensuring they are not siloed or deprioritized. Proposed additions include funding pilot projects demonstrating environmental control technologies and promoting innovative financing models (e.g., pull incentives). The economic case for AMR should reflect the long-term benefits of environmental actions and infrastructure upgrades, especially in LMICs, with a strong equity focus on affordability and scalability. Revisions should move from product-centric language toward systems-based investment in AMR-preventive architecture, explicitly including environmental interventions. Vague terms like “other interventions” should be replaced with references to pollution prevention and control, waste and wastewater management and treatment. Economic impact assessments should be updated to include environmental degradation costs and the value of preventative measures. Content treating AMR tools as standalone commodities without environmental context should be removed or condensed. While some topics, like behavior change and environmental control, environmental surveillance, or IPC through waste management, may align better with other objectives (Strategic Objective 1, 2, 3), they should remain cross-referenced to ensure integration within AMR financing strategies.

Human Health Sector: Strategic Objective 5 should emphasize the critical role of research, development, and innovation in addressing AMR, grounded in unmet public health needs and guided by WHO's bacterial and fungal priority pathogen lists,[45,46] target product profiles, and pipeline analyses. This includes advancing novel treatments, vaccines, and diagnostics, as well as innovative implementation and delivery strategies. Research should span the full R&D continuum, from basic discovery to clinical development, and include operational, behavioral, and cost-effectiveness studies. Equitable access must be a central pillar, ensuring that new antimicrobial tools are accessible across all health system levels, particularly in low-resource settings. Diagnostics must be recognized for their vital role in patient care, antimicrobial stewardship, IPC, surveillance, and outbreak response. Additionally, innovation must focus on developing affordable, rapid point-of-care diagnostics fit for LMICs and integrated into practical care pathways. These priorities are aligned with the WHO AMR Diagnostic Initiative and global targets, including the goal for 80% of countries to test all GLASS pathogens by 2030.

Animal Health Sector: Adds calls for veterinary investment, stewardship in informal markets, genomic capacity, and behavior change programs. Supports integrated One Health systems and funding for vaccines and biosecurity. Investment in improvements to husbandry, management practices and animal welfare in farming systems is urgently needed to reduce the incidence of infectious diseases and the need for antimicrobials in animals.

Section 6. Framework for action and any additional inputs

42. **Does the Framework for action sufficiently address implementation needs, challenges and the evolving AMR response landscape across all One Health sectors (human, animal, plant health, agrifood, and the environment)"? [Figure 10]**

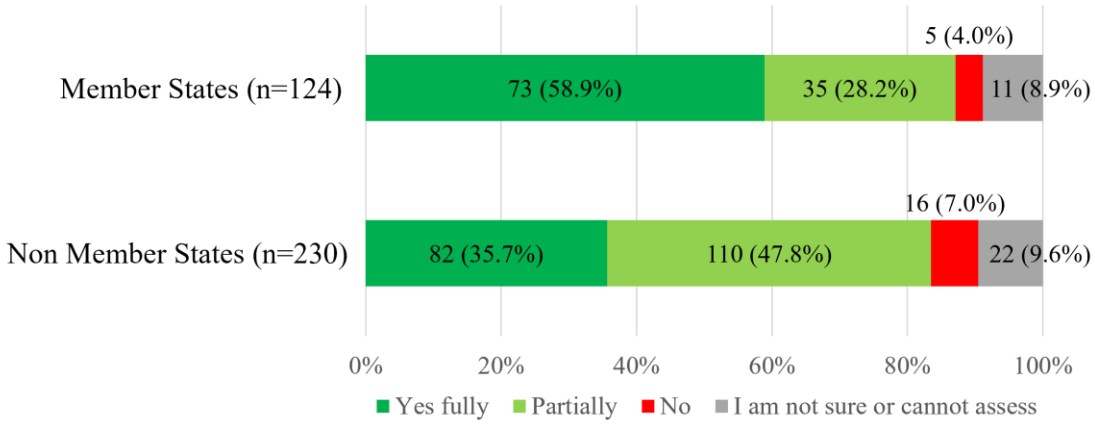

Figure 10. Perceptions of the Framework for Action's adequacy in addressing implementation needs and evolving AMR challenges across One Health sectors

43. (If No or Partially to Q42) **What would you suggest to updating the Framework for Action?**

Across all sectors:
The Framework for Action should be updated to fully reflect the One Health approach, explicitly integrating the environmental, plant health, companion animals, and agrifood sector alongside human and animal health. It must clearly define sectoral roles and responsibilities and promote coordination at global, regional, national, and

[45] WHO bacterial priority pathogens list, 2024. https://www.who.int/publications/i/item/9789240093461
[46] WHO fungal priority pathogens list to guide research, development and public health action. https://www.who.int/publications/i/item/9789240060241

subnational levels. A robust governance and accountability structure is essential, including mechanisms for transparent reporting, monitoring systems, and implementation oversight. The Framework should support sustainable financing, especially for NAPs implementation in LMICs, with practical funding strategies aligned to global political commitments and long-term integration needs including for the establishment of an independent panel for evidence for action against AMR. It should also address infrastructure and capacity gaps, particularly in low-resource settings, and acknowledge diverse national contexts, helping countries transition from planning to measurable outcomes.

To operationalize the Framework, respondents recommend incorporating a clear theory of change, updated timelines, and a dedicated M&E framework with SMART indicators[47] that are integrated into NAPs from the outset and aligned with the SDGs and the 2024 UNGA Political Declaration on AMR. The Framework should reflect links with climate change, emergency preparedness, and equity-based approaches, and promote behavior change strategies and regional collaboration mechanisms. It must support inclusive stakeholder engagement, including civil society, the private sector, and the international research community, and promote innovation, R&D, field-adaptable technologies, digital tools (e.g., AI), and equitable access to quality-assured health products. This includes also working through the MSPP to facilitate cross-sector dialogue and support NAPs implementation, as well as comprehensive whole-of-government and whole-of-society approaches to AMR management through fostering cross-sectorial and multidisciplinary collaboration.

Agrifood Sector:

- Calls for a stronger equity and justice lens, including gender and climate equity.
- Infection prevention must include clean water, food safety, and nutrition.
- Emphasizes community engagement and access to medicines and vaccines in rural/agricultural settings.
- Proposes SMART monitoring tools, regional coordination, and adaptive strategies for emerging threats.
- Suggests integrating agrochemical controls, animal welfare, and sustainable intensification, linking to food security and nutrition.
- Proposes to a component on supporting NAPs implementation in low-resource settings and resources/funding for implementation and more emphasis on reviewing/updating their NAPs.
- Better reflect the challenges of NAPs implementation and how to support NAPs implementation in low-resource settings.
- Place greater emphasis on governance, sustainable financing, and M&E mechanisms.
- Aligns with Codex Alimentarius texts related to the risk analysis, monitoring and containment of foodborne AMR

Environmental Sector:

- Strengthen environmental integration by clearly defining roles for environmental authorities and improving representation across sectors especially in AMR NAP implementation.
- Emphasize environmental development, transmission and spread of AMR, especially through pollution from pharmaceutical industry, healthcare, and agriculture.
- Expand surveillance systems to include environmental AMR data and ensure integration with AMU/AMR data systems across human and animal sectors (e.g., WHO's GLASS,[48] WOAH's ANIMUSE,[49] FAO's InFARM,[50] and the Quadripartite GISSA platform[51]).

[47] There's a S.M.A.R.T. way to write management's goals and objectives. https://community.mis.temple.edu/mis0855002fall2015/files/2015/10/S.M.A.R.T-Way-Management-Review.pdf
[48] Global Antimicrobial Resistance and Use Surveillance System (GLASS). https://www.who.int/initiatives/glass
[49] ANIMUSE. https://amu.woah.org/amu-system-portal/home
[50] InFARM System. https://www.fao.org/antimicrobial-resistance/resources/infarm-system/en/
[51] Quadripartite One Health Integrated Surveillance of AMR and AMU. https://www.qjsamr.org/technical-work/technical-group-on-integrated-surveillance

- Address AMR and antimicrobials pollution by incorporating regulatory actions on waste and wastewater from key sectors and linking AMR to broader environmental challenges like climate resilience and the circular economy.
- Improve governance and coordination with cross-sectoral mechanisms that include environmental ministries and promote regional cooperation for countries with limited capacity.
- Ensure technical and financial support for environmental AMR interventions, tailored to local contexts, especially in LMICs.
- Encourage research and pilots on innovative environmental interventions and scale-up mechanisms.

Human Health Sector:

- The importance of sector specific responses under the multisectoral NAP to ensure accountability – for human health to be guided by the WHO strategic and operational priorities to address drug-resistant infections in the human health sector 2025-2035[52] and the WHO people-centered core package of AMR interventions.[53]
- Explicit mention of the fact that an effective AMR response encompasses the prevention, diagnosis and treatment of both susceptible and resistant infections**.**
- For implementation within the human health sector, it is important to mainstream into UHC, primary health care, WASH, immunization and other health systems strengthening efforts and budgets.
- Prevention should include IPC, WASH, vaccination, nutrition and environmental contamination.
- Importance of gender and equity considerations and the involvement of civil society and the private sector in implementation. NAPs need to be prioritized, operational plans costed and financed and include an M&E framework that includes SMART[54] targets.
- Emphasis on work force capacity building to present, diagnose and appropriately treat infections, including drug-resistant infections.
- Highlight the role of AMR in health security (e.g., AMR in conflict or natural disasters, during migration or in refugee camps)
- Adapts to AI and digital tools while ensuring workforce capacity building and subnational support.

Animal Health Sector:

- Prioritizes access to diagnostics and antimicrobials, especially in informal animal production systems and rural areas.
- Highlights antifungal resistance, companion animal inclusion, and stewardship expansion.
- Governance should clarify roles across sectors and ensure accountability.
- Recommends integrating AI, regional networks, and adaptive implementation models.
- Aligns with Quadripartite and UNGA frameworks and WOAH international standards.[55]
- Develop recommendations for enhancing animal welfare, animal husbandry and management practices as a measure to prevent infectious diseases in animals with support from FAO and WOAH, within the Quadripartite collaboration.

Education Sector:

- Highlights the need for workforce training and public education.

[52] Antimicrobial resistance: accelerating
national and global responses. WHO strategic and operational priorities to address drug-resistant bacterial infections in the human health sector, 2025–2035. https://apps.who.int/gb/ebwha/pdf_files/WHA77/A77_5-en.pdf
[53] People-centred approach to addressing antimicrobial resistance in human health: WHO core package of interventions to support national action plans. https://www.who.int/publications/i/item/9789240082496
[54] There's a S.M.A.R.T. way to write management's goals and objectives. https://community.mis.temple.edu/mis0855002fall2015/files/2015/10/S.M.A.R.T-Way-Management-Review.pdf
[55] WOAH Codes and manuals. https://www.woah.org/en/what-we-do/standards/codes-and-manuals/

- Encourages inclusion of environmental dimensions of AMR and hygiene education.

Finance, Economic, or Development Sector

- Promotes equity through investment in social determinants.
- Calls for community monitoring and clearer sectoral roles.
- Advocates for innovative financing mechanisms and long-term planning.
- Real-time evaluation tools and support for regional implementation emphasized.
- Workforce and system-wide investment are key priorities.

Information, Communication, or Advocacy

- Emphasizes civil society's role in evaluation with comprehensive whole-of-government and of whole-of society approaches.
- Focuses on culturally appropriate, inclusive messaging and community engagement.
- Aligns implementation with political commitments and promotes SMART[56] targets.
- Highlights importance of pilot programs, AI, and regional knowledge sharing.
- Suggests expanded accountability and sectoral coordination frameworks.

44. **Should the updated GAP-AMR include a built-in Monitoring & Evaluation (M&E) framework with a core set of indicators across all sectors? [Figure 11]**

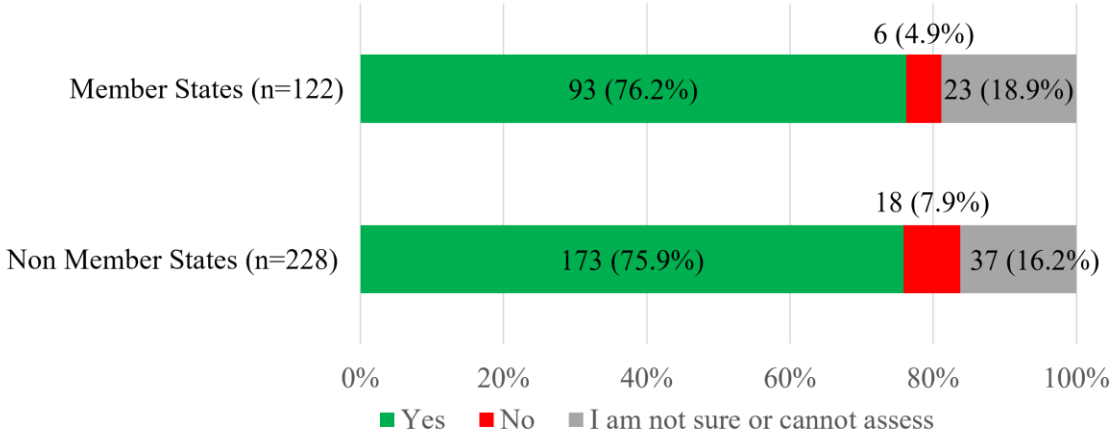

Figure 11. Support for including a core Monitoring & Evaluation (M&E) framework in the updated GAP-AMR

45. **Please explain the reason for your response to the previous question about including a Monitoring & Evaluation (M&E) framework**.

Across All Sectors:
A robust M&E framework is vital for accountability, progress tracking, adaptive management, and evidence-based decision-making across all One Health sectors. Embedding the M&E framework within the updated GAP-AMR enhances transparency, cross-sector comparability, accountability and coherence. Standardized core indicators, adaptable to national contexts, promote global benchmarking while enabling local relevance. The M&E system supports tracking of the delivery of global commitments like the UNGA Political Declaration on

[56] There's a S.M.A.R.T. way to write management's goals and objectives. https://community.mis.temple.edu/mis0855002fall2015/files/2015/10/S.M.A.R.T-Way-Management-Review.pdf

AMR, improves stakeholder engagement, and helps operationalize One Health strategies. Equity must be ensured, with M&E frameworks accounting for diverse local conditions and resource constraints, particularly in low-income settings. Developing a clear theory of change, timeline, and common M&E language—while aligning targets and indicators with the UNGA Political Declaration on AMR and the SDGs—will strengthen coherence and impact. A separate M&E framework for the updated GAP-AMR should be created to ensure clarity of purpose and accountability. Emphasis should also be placed on the systematic reporting and use of TrACSS data to inform M&E processes. Clear milestones and continuous evaluation guide resource allocation, enable course correction, and sustain political momentum.

Agrifood Sector:

- Emphasizes integration of equity-sensitive indicators (e.g., socioeconomic status, gender, age).
- Notes that the current lack of milestones hampers accountability and limits the ability to monitor and demonstrate progress with agrifood systems to address AMR.
- Unified M&E supports coordinated One Health response and advocacy.
- Supports embedding the M&E framework in GAP to improve stakeholder engagement and real-time monitoring.
- Essential for ensuring accountability, transparency, and consistent progress tracking across human, animal, plant, agrifood, and environmental sectors.

Environmental Sector:

- Environment-specific indicators are missing, making it difficult to assess AMR drivers like pollution from pharmaceutical industry, healthcare, and agricultural sources.
- Cross-sectoral alignment is needed to harmonize environmental monitoring with human, animal, and plant health efforts through shared methodologies and compatible indicators.
- Data gaps and misconceptions persist, as many actors assume environmental AMR is addressed without collecting relevant or integrated data.
- Successful models exist, such as the "Conexion AMR" dashboard (Consejo Superior de Investigaciones Científicas, Spain), which geographically maps AMR emissions from environmental sources.
- Stronger One Health integration requires equal accountability and monitoring for the environmental sector. An example was shown; Pakistan's AMR NAP includes an M&E Technical Working Group that spans One Health sectors.
- Actionable steps include developing environmental indicators in alignment with the 2024 UNGA Political Declaration, incorporating them into the M&E framework of updated GAP-AMR, fostering shared reporting systems, and using milestones to track the impact of environmental interventions over time.

Human Health Sector:

- Calls for measurable, updated indicators that include behavioral and equity dimensions.
- Supports embedding M&E for clarity and linkage between objectives and outcomes.
- Experience from Indonesia and Pakistan demonstrates improved implementation with M&E integration.
- Framework should guide national adaptation and harmonize global reporting.

Animal Health Sector:

- Emphasizes behavior and equity-focused metrics for AMR progress.
- Suggests maintaining separate M&E documents for flexibility but integrating core indicators in GAP-AMR.
- Supports adoption of harmonized sector-specific indicators for comparability and improved implementation.
- Underscores alignment with global targets and sector-specific responsibilities.

Education Sector:

- Notes lack of milestones in current GAP-AMR limits impact.
- Calls for integrated M&E with updated, cross-sector indicators.
- Examples from EU and Jordan show M&E improves resource allocation and stakeholder clarity.
- Integration improves confidence, transparency, and adaptability.

Finance, Economic, or Development Sector:

- Emphasizes role of M&E in benchmarking and donor confidence.
- Supports standardized framework to ensure alignment with 2024 UNGA political declaration goals.
- Integration enhances coordination and tracking of One Health investments.
- Examples like Pakistan show embedded M&E improves clarity and implementation.

Information, Communication, or Advocacy:

- Supports M&E for transparent progress tracking and public accountability.
- Calls for integrated, cross-sectoral indicators to support advocacy and resource mobilization.
- Integration helps countries demonstrate progress to stakeholders.
- Embedded M&E enables learning and informed policy adjustment.

Other Sectors:

- Stresses AMR complexity requires integrated data across One Health sectors.
- Supports customization of indicators while maintaining a unified global framework.
- Cites WHO/FAO/WOAH tools as strong foundations.
- Recommends embedding M&E in GAP-AMR for measurable outcomes and improved governance.

Conclusion

The findings from this online survey underscore broad and unified support for updating the GAP-AMR to better meet the complex, evolving nature of the AMR crisis. While the foundational structure and strategic objectives of the 2015 GAP-AMR remain relevant, respondents highlighted the need for a more integrated, measurable, and equity-driven plan that reflects the realities of today's multisectoral AMR landscape. The survey also revealed a strong call for full operationalization of the One Health approach, clearer delineation of roles and responsibilities across sectors, and the embedding of sustainable financing, environmental full integration, and community engagement into the heart of the updated GAP-AMR.

Respondents emphasized that addressing AMR requires technical updates together with a shift in governance, whole-of-society implementation, and political will. The updated GAP-AMR must be capable of driving system-wide change, supporting the development and implementation of robust, inclusive, and well-resourced NAPs especially in LMICs, and providing targeted capacity building and technical assistance. Embedding a core M&E framework, aligning with global targets such as the SDGs and the 2024 UNGA Political Declaration on AMR, and tracking both resource mobilization and effective use of funds is essential to ensure transparency, accountability, and sustained momentum.

Given the accelerating AMR crisis, clear timelines, urgent implementation, and mechanisms for continuous stakeholder engagement, including civil society, academia, and the private sector, are critical to maintaining relevance and momentum.

Way Forward

This summary of the responses received establishes a strong evidence base to guide the next phases of the GAP-AMR update process. The inputs inputs will directly inform the drafting of the updated GAP-AMR and subsequent consultations. As the process advances, there will be multiple opportunities for Member States and stakeholders to further engage and contribute. A multi-stakeholder consultation on the draft updated GAP-AMR will take place

through the AMR MSPP in September 2025.[57] To promote transparency and inclusivity, the updated GAP-AMR draft will be made available for public written feedback through open online consultations. Member State consultations will be conducted at global and regional levels. The final updated GAP-AMR is expected to be formally adopted by the governing bodies of the Quadripartite organizations.

[57] Multistakeholder Consultations on GAP AMR. https://www.qjsamr.org/multistakeholder-partnership-platform/multi-stakeholder-consultations-on-gap-amr

Appendix

Appendix 1: Full copy of the survey instrument.

Formal Consultations for Updating the Global Action Plan on AMR

Thank you for participating in this survey!

Your insights will be crucial in ensuring the updated Global Action Plan on Antimicrobial Resistance (GAP-AMR) effectively addresses current challenges, emerging issues, and global priorities as reflected in the United Nations General Assembly (UNGA) Political Declaration on AMR. To provide informed input, we strongly encourage you to review the current GAP-AMR document before completing this survey.

Since its adoption in 2015, the GAP-AMR has guided the global responses to AMR resulting 178 countries having developed their AMR National Action Plans. However, over the past decade, human health, animal health, agrifood, environmental, and development landscape has evolved, requiring a more inclusive and whole of government and whole-of-society approach.

The 79th Session of the UNGA held in 2024, through its Political Declaration of the high-level meeting on antimicrobial resistance, has called for an updated GAP-AMR by 2026 to strengthen global coordination and accelerate action through a robust, inclusive, and **multisectoral One Health-driven response**.

This survey is part of the official consultation process led by the Quadripartite Organizations (FAO, UNEP, WHO, and WOAH) towards updating the GAP-AMR.

Key areas of focus for the survey include:

1. **Major changes and emerging issues** in the AMR response landscape that should be considered while updating the GAP-AMR.
2. **Updates to the vision, mission, and scope** of an updated GAP-AMR in line with the current realities.
3. **Technical updates required** in the strategic objectives of the GAP-AMR.
4. **Changes required to the Framework for Action** to enhance coordinated stakeholder engagement at all levels.
5. **Any other suggestions** you may have for consideration in the GAP-AMR Update.

Your feedback will contribute to enhancing the global strategy to accelerate action against AMR to support advancing the 2030 Sustainable Development Agenda and beyond.

The deadline for this survey is 8 June 2025.

Further guidance for completing this survey:

In responding to this survey, please consider key developments, emergent evidence and reports since the GAP-AMR was developed in 2015 such as:

- World Health Organization, Global Action Plan on Antimicrobial Resistance
- Interagency Coordination Group on Antimicrobial Resistance (IACG), No Time to Wait: Securing the Future from Drug-Resistant Infections
- Report of the Secretary-General, 2019 Follow-up to the Political Declaration of the UNGA HLM on AMR 2016
- The 2016 Political Declaration of the High-Level Meeting of the General Assembly on Antimicrobial Resistance
- The 2024 Political Declaration of the High-Level Meeting of the General Assembly on Antimicrobial Resistance
- The First Quadripartite Biennial Report on Implementation of the global action plan on AMR

- From Declaration to Implementation – Accelerating Actions Through Multisectoral Partnerships for the Containment of AMR – 4th Global High-Level Ministerial Conference on Antimicrobial Resistance (AMR) held on 15 and 16 November 2024
- Sector specific strategies and high-level reports
- New evidence such as the GRAM research on AMR, the EcoAMR series, and Global Leaders Group reports on economic burden of AMR
- Global Leaders Group resources (i.e. strategy documents, information notes, statements and calls to action)
- Tracking AMR Country Self-assessment Survey (TrACSS) Database on NAP Implementation
- UNEP. Bracing for Superbugs: Strengthening environmental action in the One Health response to antimicrobial resistance
- Your implementation experiences and lessons learned

We also encourage you to consider how strategies and initiatives introduced since 2015 in related areas might inform or shape the update of the GAP-AMR. Where possible, please reference these developments in your responses.
Please note:

- This questionnaire consists of six sections and will take approximately 60-120 minutes to complete. This needs to be submitted within a one month period. Multiple individuals may collaborate to complete the same survey response (this can be indicated in the first section of the survey).

- Your personal data will be treated with the utmost confidentiality, and your input will be used anonymously in the analysis of this survey's results.

- Should you have any questions about this questionnaire or need clarification, please contact the Quadripartite Joint Secretariat on AMR: amr-qjs@who.int

- For detailed information on the proposed process for updating the GAP-AMR, please refer to the "Road Map for Updating the Global Action Plan on AMR (GAP-AMR)" provided by the Quadripartite Joint Secretariat.

Thank you for your time and valuable insights

Consent for Data Use

We kindly request your consent to use the information you provide in this survey to support the update of the Global Action Plan on Antimicrobial Resistance (GAP-AMR). Your input may also be used in presentations, reports, and publications related to this initiative. All data will be anonymized and reported in aggregate form to ensure confidentiality. No personal identifiers will be published or shared. Any personal details provided will be used solely for clarification purposes if necessary.

1. Do you consent to the use of your input provided in this survey for the purposes described above?
    - Yes, I consent.
    - No, I do not *consent (please note your consent is required for participation in this survey).*

Section 1. Respondent information

Please provide the following information to ensure One Health approach and the inclusion of multi-sectoral perspectives in the update of the GAP-AMR.

2. Full name
3. Email address (preferably your official/institutional email)
4. Are you responding on behalf of a Member State?

- Yes
- No

5. (If you are responding on behalf of a Member State) Please select your country from the dropdown list below. (A dropdown list will be displayed on SurveyMonkey)

6. (If you are NOT responding on behalf of a Member State) On whose behalf are you responding to this survey?

   - My individual capacity
   - My organization, institution, company, etc.
   - Other (please specify)

7. (If you are NOT responding on behalf of a Member State) Please indicate your affiliation (select all that apply)

   - Quadripartite Organizations (FAO, UNEP, WHO, WOAH)
   - Other UN Organization/Agency
   - National Public Health Agency
   - National Animal Health Agency
   - Governmental Health Services
   - Governmental Veterinary Services
   - Academic & Research Institutions
   - Private Sector
   - Intergovernmental Organization
   - Non-Governmental Organization
   - Industry
   - Civil Society
   - International Donors & Financial Institutions
   - Global Procurement Agencies
   - Healthcare Facilities
   - Professional associations (Animal Health)
   - Educational Institutions
   - Media
   - Patients, Families
   - AMR Survivors
   - Farmers associations
   - Environmental Associations
   - Youth group
   - Other (please specify)

8. (If you are NOT responding on behalf of a Member State) Please provide the full name of your organization, institution, company, etc.

9. What is your current job title / role or job occupation? (e.g. Medical officer, Veterinarian, Policy advisor, Researcher, Student, Patient representative, etc.) If none of these apply, please describe your current status or involvement relevant to this survey.

10. Which UN region(s) does your work primarily impact? (multiple answers allowed)

    - Africa
    - Asia-Pacific
    - Eastern Europe
    - Latin America and Caribbean
    - Western Europe and other States
    - Global (Headquarters settings)

- Regional (Regional headquarters settings)
- Other (please specify)

11. Which sector(s) best describe the focus of your work in the context of this survey? (Select all that apply. Please answer based on how you indicated earlier—either from your individual perspective or on behalf of your organization).

    - Human health sector
    - Animal health sector
    - Agrifood sector
    - Environmental sector
    - Education sector
    - Finance, Economic, or Development sector
    - Information, communication, or advocacy
    - Other (please specify)

12. How long have you been working in the field of AMR or related field? (Please select the option that best reflects your experience. If you are not working in the field of AMR, select the last option.)

    - Less than 2 years
    - 2-5 years
    - 6-14 years
    - 15 years or more
    - I do not work in the field of AMR

Section 2: Goal of the GAP-AMR

When answering the questions below, please consider all sectors relevant to AMR—including human health, animal health, agrifood, and the environment— and bearing in mind the overall goal of the GAP-AMR as defined in 2015; *"The overall goal of the action plan is to ensure, for as long as possible, continuity of the ability to treat and prevent infectious diseases with effective and safe medicines that are quality-assured, used in a responsible way, and accessible to all who need them."*

13. To what extent do you agree with the following statement? "The current GAP-AMR's goal sufficiently reflects the evolving challenges of AMR, One Health and sectoral needs for addressing AMR in the human health, animal health, agrifood, and the environmental sectors"

    - Strongly agree
    - Agree
    - Neither agree nor disagree
    - Disagree
    - Strongly disagree
    - I am not sure or cannot assess

14. What aspects of the current GAP-AMR goal statement require an update? Please reflect on addressing the needs and responsibilities in AMR response across all One Health sectors—human health, animal health, agrifood and the environment— and provide reason and supportive evidence where applicable.

15. What is/are the emerging topic(s) that should be considered in updating the goal of the current GAP-AMR? Please provide your response **up to three topics** that best describe the issue.

16. What timeline should the updated GAP-AMR have for achieving its goal?

    - o No timeline required
    - o 5 years
    - o 10 years
    - o More than 10 years
    - o I am not sure or cannot assess
    - o Other (please specify)

17. Do you think that the updated GAP-AMR should include intermediate milestones to track progress toward its objectives?

    - o Yes
    - o No
    - o I am not sure or cannot assess

18. (If Yes) Given that you responded Yes to the previous question, over what time period should the intermediate milestones be set? Please respond using hole numbers in years.

Section 3. Scope and structure of the updated GAP-AMR

It is proposed that the updated GAP-AMR could be structured around the following elements.

- Introduction
- Overall goal
- Developments since 2015 — progress made & new key commitments (which GAP-AMR should support achievement of)
- Strategic objectives / rationale / theory of change (i.e. how to achieve the goal)
- Framework for implementation — key role of stakeholders
- Monitoring framework, targets, and key indicators

19. In your opinion, does the proposed GAP-AMR structure adequately cover all essential components? Please consider the need for each One Health sector—human health, animal health, agrifood and environment— to be adequately represented in the structure and elements.

    - o Yes fully
    - o Partially
    - o No
    - o I am not sure or cannot assess

20. (If No or Partially) Given that you responded No or Partially to the previous question, please specify any additions or modifications you would suggest.

Section 4. Strategic objectives

In this section, we will ask you about the existing five GAP-AMR Strategic Objectives. For each strategic objective statement below, indicate whether it remains relevant in addressing AMR challenges over the next 5-10 years.

21. Please indicate your opinion on the statement below in relation to each Strategic Objective.

"*The following GAP-AMR 2015 Strategic Objective statement have sufficient clarity, relevance and alignment to the evolving challenges of AMR across the human health, agrifood systems, animal health, and the environmental sectors to effectively drive or accelerate a One Health multisectoral global AMR response in the medium-term over the next 5 to 10 years.*"

This question is shown in a grid on SurveyMonkey. Please select your answer from: Strongly agree, Agree, Neither agree nor disagree, Disagree, Strongly disagree, I am not sure or cannot assess.

1. Improve awareness and understanding of antimicrobial resistance through effective communication, education and training
2. Strengthen the knowledge and evidence base through surveillance and research
3. Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures
4. Optimize the use of antimicrobial medicines in human and animal health
5. Develop the economic case for sustainable investment that takes account of the needs of all countries, and increase investment in new medicines, diagnostic tools, vaccines and other interventions

22. Do you propose any revisions to **any of the current GAP-AMR strategic objective(s) statement to enhance clarity or One Health approach**?

    - Yes
    - No
    - I am not sure or cannot assess

23. (If Yes) Given that you responded Yes to the previous question, please provide specific recommendations and, if possible, supporting rationale or evidence.
24. Do you think any new Strategic Objective(s) should be added to the GAP-AMR?

    - Yes
    - No
    - I am not sure or cannot assess

25. (If Yes to Q24) Given that you responded Yes to the previous question, please describe your proposed new objective(s) and provide any supporting rationale or evidence.
26. (If Yes to Q24) Please suggest the outcomes or actions the new objective(s) will aim to achieve? You may also reference a global or national example where this has been successfully integrated, if applicable.

Section 5. Technical content

This section assesses the alignment of the technical content* under each strategic objective to the current context and evolving challenges of AMR across human health, animal health, agrifood systems, and the environment sectors. Your inputs are required to update the contents to effectively drive or accelerate a One Health multisectoral global AMR response in the medium-term over the next 5 to 10 years.

*the technical content is the paragraph(s) under each strategic objective in the GAP-AMR. You will have a link to download the technical content for each strategic objective.

Strategic Objective 1

Improve awareness and understanding of antimicrobial resistance through effective communication, education and training

Is the technical content under this strategic objective relevant to your expertise or experience (e.g. human health, animal health, agrifood, environment)? If no, you will skip answering this section.

- o Yes
- o No. This is not relevant to my field of expertise. I prefer not to answer this section.

If No, please skip to the Strategic Objective 2.

28. To what extent do you agree with the statement?

"*This GAP Strategic Objective adequately reflect the evolving challenges and emerging issues of AMR across human health, agrifood systems, animal health, and the environment; and supports a One Health approach*."

- o Strongly Agree
- o Agree
- o Neither agree nor disagree
- o Disagree
- o Strongly disagree

29. Please provide your suggestions for the technical content under this strategic objective. For each suggestion, include the rationale and supporting evidence.

- What specific new content is to be **added**?
- What content is to be **modified or rephrased**?
- What content is to be **removed**?
- Is there any content that remains relevant but **may align better with another strategic objective**? (please describe specific content and indicate to which strategic objective the identified content better aligns)

Strategic Objective 2

Strengthen the knowledge and evidence base through surveillance and research

30. Is the technical content under this strategic objective relevant to your expertise or experience (e.g. human health, animal health, agrifood, environment)? If no, you will skip answering this section.

- o Yes
- o No. This is not relevant to my field of expertise. I prefer not to answer this section.

If No, please skip to the Strategic Objective 3.

31. To what extent do you agree with the statement below?

"This GAP Strategic Objective adequately reflect the evolving challenges and emerging issues of AMR across human health, agrifood systems, animal health, and the environment; and supports a One Health approach."

- o Strongly Agree
- o Agree
- o Neither agree nor disagree
- o Disagree
- o Strongly disagree

32. Please provide your suggestions for the technical content under this strategic objective. For each suggestion, include the rationale and supporting evidence.

- What specific new content is to be **added**?
- What content is to be **modified or rephrased**?:
- What content is to be **removed**?:
- Is there any content that remains relevant but **may align better with another strategic objective**? (please describe specific content and indicate to which strategic objective the identified content better aligns)

Strategic Objective 3

Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures

33. Is the technical content under this strategic objective relevant to your expertise or experience (e.g. human health, animal health, agrifood, environment)? If no, you will skip answering this section.

    - o Yes
    - o No. This is not relevant to my field of expertise. I prefer not to answer this section.

If No, please skip to the Strategic Objective 4.

34. To what extent do you agree with the statement below?

"This GAP Strategic Objective adequately reflect the evolving challenges and emerging issues of AMR across human health, agrifood systems, animal health, and the environment; and supports a One Health approach."

- o Strongly Agree
- o Agree
- o Neither agree nor disagree
- o Disagree
- o Strongly disagree

35. Please provide your suggestions for the technical content under this strategic objective. For each suggestion, include the rationale and supporting evidence.

- What specific new content is to be **added**?
- What content is to be **modified or rephrased**?
- What content is to be **removed**?
- Is there any content that remains relevant but **may align better with another strategic objective**? (please describe specific content and indicate to which strategic objective the identified content better aligns)

Strategic Objective 4

Optimize the use of antimicrobial medicines in human and animal health

36. Is the technical content under this strategic objective relevant to your expertise or experience (e.g. human health, animal health, agrifood, environment)? If no, you will skip answering this section.

    - o Yes
    - o No. This is not relevant to my field of expertise. I prefer not to answer this section.

If No, please skip to the Strategic Objective 5.

37. To what extent do you agree with the statement below?

"This GAP Strategic Objective adequately reflect the evolving challenges and emerging issues of AMR across human health, agrifood systems, animal health, and the environment; and supports a One Health approach."

- Strongly Agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

38. Please provide your suggestions for the technical content under this strategic objective. For each suggestion, include the rationale and supporting evidence.

- What specific new content is to be **added**?
- What content is to be **modified or rephrased**?
- What content is to be **removed**?
- Is there any content that remains relevant but **may align better with another strategic objective**? (please describe specific content and indicate to which strategic objective the identified content better aligns)

Strategic Objective 5

Develop the economic case for sustainable investment that takes account of the needs of all countries, and increase investment in new medicines, diagnostic tools, vaccines and other interventions

- Is the technical content under this strategic objective relevant to your expertise or experience (e.g. human health, animal health, agrifood, environment)? If no, you will skip answering this section.
- Yes
- No. This is not relevant to my field of expertise. I prefer not to answer this section.

If No, please skip to the next section.

40. To what extent do you agree with the statement below?

"This GAP Strategic Objective adequately reflect the evolving challenges and emerging issues of AMR across human health, agrifood systems, animal health, and the environment; and supports a One Health approach."

- Strongly Agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

41. Please provide your suggestions for the technical content under this strategic objective. For each suggestion, include the rationale and supporting evidence.

- What specific new content is to be **added**?
- What content is to be **modified or rephrased**?
- What content is to be **removed**?
- Is there any content that remains relevant but **may align better with another strategic objective**? (please describe specific content and indicate to which strategic objective the identified content better aligns)

Section 6. Framework for action and any additional inputs

42. Does the **Framework for action** (paragraph 48-50) sufficiently address implementation needs, challenges and the evolving AMR response landscape across all One Health sectors (human, animal, plant health, agrifood, and the environment)"?

- Yes fully
- Partially
- No
- I am not sure or cannot assess

43. (If No or Partially) Given that you responded No or Partially to the previous question, what would you suggest to update the Framework for Action?

44. Should the updated GAP-AMR include a built-in Monitoring & Evaluation (M&E) framework with a core set of indicators across all sectors? Note: Previously, the M&E framework for the GAP was outlined in a separate document.

    - Yes
    - No
    - I am not sure or cannot assess

45. Please explain the reason for your response to the previous question about including a Monitoring & Evaluation (M&E) framework. You may also share any evidence, relevant examples or experiences to support your answer, if available.

46. Would you like to be involved in further consultations or working groups related to the GAP-AMR update?

    - Yes
    - No

47. (If Yes) Given that you responded Yes to the previous question, in which sector(s) would you like to contribute further?

    - Human health sector
    - Animal health sector
    - Agrifood sector
    - Environmental sector
    - Education sector
    - Finance, Economic, or Development sector
    - Information, communication, or advocacy
    - Other (please specify)

This is the end of the questionnaire.

We appreciate your participation and invaluable contribution.

Appendix 2: Thematic analysis results of overall responses to key open-ended questions.

Section 2.
14. What aspects of the current GAP-AMR goal statement require an update? Please reflect on addressing the needs and responsibilities in AMR response across all One Health sectors—human health, animal health, agrifood and the environment— and provide reason and supportive evidence where applicable.

	MS (106)		Non MS (210)		All (316)	
One Health integration	66	62%	123	59%	189	60%
Environmental integration	25	24%	53	25%	78	25%
Equity, access and social determinants	16	15%	48	23%	64	20%
Governance and political commitment	25	24%	34	16%	59	19%
Agrifood system inclusion	18	17%	28	13%	46	15%
Surveillance, integrated surveillance	20	19%	22	10%	42	13%
Animal health inclusion	13	12%	24	11%	37	12%
Infection prevention and control	6	6%	31	15%	37	12%
Cross-sector accountability and roles	15	14%	18	9%	33	10%
Global coordination and funding	10	9%	21	10%	31	10%
Research and development, innovation, new technologies (e.g. AI)	7	7%	23	11%	30	9%
Diagnostics and diagnostics stewardship	6	6%	23	11%	29	9%
Clear measurable targets, monitoring and evaluation	13	12%	15	7%	28	9%
Antimicrobial stewardship	7	7%	16	8%	23	7%
Sustainability and long-term vision	5	5%	16	8%	21	7%
Behavior change and community engagement	5	5%	14	7%	19	6%
Human-centric framing critique, need for rebalancing	4	4%	14	7%	18	6%
Climate change and planetary health	4	4%	8	4%	12	4%
Antifungal, antiviral resistance	1	1%	7	3%	8	3%
Private sector engagement	3	3%	2	1%	5	2%
Water, sanitation and hygiene (WASH)	2	2%	3	1%	5	2%
Health system strengthening	0	0%	7	3%	7	2%
Waste management and water safety	0	0%	3	1%	3	1%
Universal health care and primary health care integration	1	1%	2	1%	3	1%
Neglected or emerging domains	0	0%	1	0%	1	0%
Agrifood trade and global market pressures	0	0%	1	0%	1	0%

15. What is/are the emerging topic(s) that should be considered in updating the goal of the current GAP-AMR? Please provide your response up to three topics that best describe the issue.

	MS (111)		Non MS (218)		All (329)	
One health integration	57	51%	116	53%	173	53%
Environmental integration	34	31%	71	33%	105	32%
Research & development, innovation, new technologies (e.g. AI)	22	20%	46	21%	68	21%
Surveillance, integrated surveillance	18	16%	44	20%	62	19%

	MS (111)		Non MS (218)		All (329)	
Equity and social determinants	14	13%	35	16%	49	15%
Animal health inclusion	17	15%	32	15%	49	15%
Awareness, community engagement, education and behavior change	14	13%	30	14%	44	13%
Agrifood system inclusion	19	17%	24	11%	43	13%
Governance and political commitment	11	10%	30	14%	41	12%
Access to quality-assured antimicrobials	12	11%	26	12%	38	12%
Climate change	15	14%	23	11%	38	12%
Antimicrobial stewardship	15	14%	22	10%	37	11%
Cross-sector accountability and roles	10	9%	24	11%	34	10%
Infection prevention and control	12	11%	22	10%	34	10%
Sustainability and long-term vision	10	9%	19	9%	29	9%
Global coordination and funding	10	9%	18	8%	28	9%
Diagnostics and diagnostics stewardship	3	3%	22	10%	25	8%
Clear measurable targets, monitoring & evaluation	9	8%	8	4%	17	5%
Antifungal, antiviral resistance	6	5%	10	5%	16	5%
Against the current goal	2	2%	13	6%	15	5%
Water, sanitation and hygiene (WASH)	1	1%	13	6%	14	4%
Trade and AMR in the agrifood sector	1	1%	8	4%	9	3%
Health security & emergency preparedness	1	1%	6	3%	7	2%
In favor of the current goal	4	4%	3	1%	7	2%
Supply chain, procurement, manufacturing	1	1%	6	3%	7	2%
Incentives for innovation, investment models	0	0%	5	2%	5	2%
Private sector engagement	1	1%	2	1%	3	1%
Strengthening health systems capacity	0	0%	3	1%	3	1%

Section 5.

Strategic Objective 1. Improve awareness and understanding of antimicrobial resistance through effective communication, education and training

29. Please provide your suggestions for the technical content under this strategic objective. For each suggestion, include the rationale and supporting evidence.

What specific new content is to be added?

	MS (68)		Non MS (122)		All (190)	
One Health integration	25	37%	38	31%	63	33%
Environmental integration	6	9%	8	7%	14	7%
Awareness	13	19%	39	32%	52	27%
Communication infrastructure	1	1%	5	4%	6	3%
Health literacy	0	0%	3	2%	3	2%
Education, professional training	12	18%	33	27%	45	24%
Multisectoral stakeholder engagement	11	16%	23	19%	34	18%
AMR survivors	0	0%	3	2%	3	2%

	MS (68)		Non MS (122)		All (190)	
Media engagement	0	0%	1	1%	1	1%
Professional-patient communication	0	0%	1	1%	1	1%
Youth engagement	0	0%	2	2%	2	1%
Engaging across disease community	0	0%	1	1%	1	1%
Equity	5	7%	13	11%	18	9%
Behavioral change & social science	5	7%	13	11%	18	9%
Monitoring & evaluation	6	9%	10	8%	16	8%
Digital tools & innovations	2	3%	13	11%	15	8%
Prevention measures (IPC, vaccine)	2	3%	10	8%	12	6%
Antimicrobial stewardship	1	1%	8	7%	9	5%
Antifungal, antiviral resistance	0	0%	2	2%	2	1%
Hospital acquired infections	0	0%	1	1%	1	1%
Leadership development	0	0%	1	1%	1	1%

What content is to be modified or rephrased?

	MS (55)		Non MS (99)		All (154)	
Awareness	7	13%	34	34%	41	27%
Education, professional training	9	16%	30	30%	39	25%
Equity and context-specific messaging	5	9%	25	25%	30	19%
Multisectoral stakeholder engagement	11	20%	16	16%	27	18%
One Health integration	10	18%	15	15%	25	16%
Behavioral change and social science	5	9%	18	18%	23	15%
Environmental integration	4	7%	11	11%	15	10%
Prevention and stewardship	3	5%	9	9%	12	8%
Monitoring & evaluation	3	5%	5	5%	8	5%
Digital innovations and new technologies, AI	1	2%	4	4%	5	3%
Surveillance	1	2%	0	0%	1	1%

Strategic Objective 2. Strengthen the knowledge and evidence base through surveillance and research

31. Please provide your suggestions for the technical content under this strategic objective. For each suggestion, include the rationale and supporting evidence.

What specific new content is to be added?

	MS (64)		Non MS (132)		All (196)	
Integrated surveillance & data sharing	17	27%	39	30%	56	29%
Environmental surveillance & research	11	17%	32	24%	43	22%
Implementation research and evidence translation	5	8%	16	12%	21	11%
Standardized surveillance metrics	4	6%	16	12%	20	10%
Sustainable surveillance systems	4	6%	13	10%	17	9%
Advanced technologies in AMR surveillance	5	8%	10	8%	15	8%

	MS (64)		Non MS (132)		All (196)	
AMR governance and priority setting	8	13%	7	5%	15	8%
Surveillance of antimicrobial use	5	8%	10	8%	15	8%
Capacity building for AMR surveillance and research	2	3%	9	7%	11	6%
Digital and technological innovation in surveillance	1	2%	9	7%	10	5%
AMR in animal agriculture	1	2%	7	5%	8	4%
Social science in AMR research	3	5%	5	4%	8	4%
Community engagement in surveillance	1	2%	6	5%	7	4%
Antimicrobial stewardship	3	5%	3	2%	6	3%
Climate and environmental drivers	2	3%	4	3%	6	3%
Cost-effectiveness analysis	0	0%	6	5%	6	3%
Alternatives to antimicrobials	0	0%	5	4%	5	3%
AMR in plant agriculture	2	3%	3	2%	5	3%
Antifungal, antiviral resistance	1	2%	3	2%	4	2%
Determinants of AMR	1	2%	3	2%	4	2%
Equity in AMR surveillance	1	2%	3	2%	4	2%
Research and development	1	2%	3	2%	4	2%
Innovation in AMR surveillance and control	0	0%	3	2%	3	2%
Access barriers to diagnostics and treatments	0	0%	1	1%	1	1%
Behavioral and cultural drivers of AMR	0	0%	1	1%	1	1%
Diagnostic and data innovation	0	0%	1	1%	1	1%
Environmental transmission pathways	0	0%	1	1%	1	1%
Laboratory capacity and quality assurance	0	0%	1	1%	1	1%
Local and global surveillance alignment	0	0%	1	1%	1	1%

What content is to be modified or rephrased?

	MS (46)		Non MS (79)		All (125)	
Integrated One Health surveillance & data sharing	8	17%	27	34%	35	28%
Governance and priority setting	6	13%	18	23%	24	19%
Standardized surveillance metrics	3	7%	10	13%	13	10%
Implementation research and evidence translation	4	9%	8	10%	12	10%
Environmental surveillance and research	3	7%	7	9%	10	8%
Equity in AMR surveillance	4	9%	5	6%	9	7%
Advanced technologies in AMR surveillance	3	7%	4	5%	7	6%
Social science in AMR research	1	2%	5	6%	6	5%
Determinants of AMR	4	9%	1	1%	5	4%
Research and development	2	4%	3	4%	5	4%
Strengthening national surveillance systems	1	2%	4	5%	5	4%
Burden-based surveillance priorities	0	0%	4	5%	4	3%
Capacity building for AMR surveillance and research	1	2%	3	4%	4	3%
Surveillance of antimicrobial use	2	4%	2	3%	4	3%
Alternatives to antimicrobials	1	2%	2	3%	3	2%

	MS (46)		Non MS (79)		All (125)	
Antimicrobial stewardship	0	0%	3	4%	3	2%
Cost-effectiveness analysis	0	0%	3	4%	3	2%
AMR in plant agriculture	1	2%	1	1%	2	2%
Disaggregated AMU/AMR data	0	0%	2	3%	2	2%
Prevention-oriented surveillance and policy	0	0%	2	3%	2	2%
Surveillance scope and definition	0	0%	2	3%	2	2%
Basic research on AMR mechanisms	0	0%	1	1%	1	1%
Community engagement in surveillance	0	0%	1	1%	1	1%
Public-private collaboration	0	0%	1	1%	1	1%
Sustainable financing mechanisms	0	0%	1	1%	1	1%

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

34. Please provide your suggestions for the technical content under this strategic objective. For each suggestion, include the rationale and supporting evidence.

What specific new content is to be added?

	MS (65)		Non MS (118)		All (183)	
IPC	12	9%	24	9%	36	9%
One Health approach	5	4%	20	8%	25	6%
Biosecurity in animal and plant health	8	6%	15	6%	23	6%
Vaccination and immunization	9	7%	13	5%	22	6%
Animal welfare and husbandry practices	5	4%	9	3%	14	4%
WASH	2	1%	10	4%	12	3%
Infrastructure and resource investment	3	2%	7	3%	10	3%
Community engagement and behavior change	2	1%	6	2%	8	2%
Waste management and environmental controls	2	1%	6	2%	8	2%
Antifungal, antiviral resistance	2	1%	4	2%	6	2%
Equity and vulnerable populations	0	0%	6	2%	6	2%
Governance and coordination mechanisms	1	1%	5	2%	6	2%
Health system strengthening	2	1%	4	2%	6	2%
Regulatory and legal frameworks	2	1%	3	1%	5	1%
Food safety and hygiene	3	2%	1	0%	4	1%
Surveillance, monitoring, and evaluation	0	0%	4	2%	4	1%
Antimicrobial stewardship	3	2%	0	0%	3	1%
Alternatives to antimicrobials	0	0%	2	1%	2	1%
Climate and environmental drivers	1	1%	1	0%	2	1%
Access	0	0%	1	0%	1	0%
Innovation and emerging technologies, AI	1	1%	0	0%	1	0%
Integrated surveillance & data sharing	1	1%	0	0%	1	0%

What content is to be modified or rephrased?

	MS (65)		Non MS (118)		All (183)	
IPC	12	18%	24	20%	36	20%
One Health approach	5	8%	20	17%	25	14%
Biosecurity in animal and plant health	8	12%	15	13%	23	13%
Vaccination and immunization	9	14%	13	11%	22	12%
Animal welfare and husbandry practices	5	8%	9	8%	14	8%
WASH	2	3%	10	8%	12	7%
Infrastructure and resource investment	3	5%	7	6%	10	5%
Community engagement and behavior change	2	3%	6	5%	8	4%
Waste management and environmental controls	2	3%	6	5%	8	4%
Antifungal, antiviral resistance	2	3%	4	3%	6	3%
Equity and vulnerable populations	0	0%	6	5%	6	3%
Governance and coordination mechanisms	1	2%	5	4%	6	3%
Health system strengthening	2	3%	4	3%	6	3%
Regulatory and legal frameworks	2	3%	3	3%	5	3%
Food safety and hygiene	3	5%	1	1%	4	2%
Surveillance, monitoring, and evaluation	0	0%	4	3%	4	2%
Antimicrobial stewardship	3	5%	0	0%	3	2%
Alternatives to antimicrobials	0	0%	2	2%	2	1%
Climate and environmental drivers	1	2%	1	1%	2	1%
Access	0	0%	1	1%	1	1%
Innovation and emerging technologies, AI	1	2%	0	0%	1	1%
Integrated surveillance & data sharing	1	2%	0	0%	1	1%

Strategic Objective 4. Optimize the use of antimicrobial medicines in human and animal health

38. Please provide your suggestions for the technical content under this strategic objective. For each suggestion, include the rationale and supporting evidence.

What specific new content is to be added?

	MS (60)		Non MS (125)		All (185)	
Antimicrobial stewardship programs	6	10%	37	30%	43	23%
Antimicrobial use in plants and crops	11	18%	28	22%	39	21%
Regulation, enforcement and legal framework	13	22%	25	20%	38	21%
Environmental contamination and waste management	12	20%	21	17%	33	18%
One Health integration and cross-sectoral collaboration	9	15%	24	19%	33	18%
Access to antimicrobials	7	12%	24	19%	31	17%
Diagnostics and diagnostic stewardship	6	10%	15	12%	21	11%
Data, monitoring and benchmarking	6	10%	12	10%	18	10%
Behavioral and social science approaches	2	3%	11	9%	13	7%
Equity, gender, and vulnerable populations	2	3%	10	8%	12	6%
Informal markets and over the counter medicines use	1	2%	10	8%	11	6%
Alternatives to antimicrobials (e.g., vaccines, probiotics, phages)	1	2%	9	7%	10	5%

	MS (60)		Non MS (125)		All (185)	
Education and prescriber training	5	8%	4	3%	9	5%
Antimicrobial use in aquaculture	1	2%	5	4%	6	3%
Innovation, research and development, and product lifecycle incentives	0	0%	6	5%	6	3%
Legislation and policy development	4	7%	2	2%	6	3%
Veterinary services and annimal health tools	0	0%	6	5%	6	3%
AWaRe classification implementation	3	5%	2	2%	5	3%
Substandard and falsified medicines	2	3%	2	2%	4	2%
Supply chain, stockouts and procurement	0	0%	4	3%	4	2%

What content is to be modified or rephrased?

	MS (35)		Non MS (35)		All (70)	
Antimicrobial Stewardship programs	6	17%	18	51%	24	34%
Regulation and enforcement	3	9%	21	60%	24	34%
Diagnostics and diagnostic stewardship	9	26%	13	37%	22	31%
Data, monitoring and benchmarking	8	23%	9	26%	17	24%
Access to antimicrobials	1	3%	12	34%	13	19%
Environmental contamination and waste management	1	3%	11	31%	12	17%
One Health integration and cross-sectoral collaboration	2	6%	10	29%	12	17%
Equity, gender, and vulnerable populations	2	6%	7	20%	9	13%
Education & prescriber training	3	9%	4	11%	7	10%
Informal markets and over the counter medicines use	1	3%	5	14%	6	9%
Antimicrobial use in plants and crops	4	11%	1	3%	5	7%
AWaRe classification implementation	1	3%	4	11%	5	7%
Behavioral and social science approaches	2	6%	3	9%	5	7%
Veterinary services and animal health tools	2	6%	3	9%	5	7%
Innovation, research and development, and product lifecycle incentives	0	0%	4	11%	4	6%
Antimicrobial use in aquaculture	2	6%	1	3%	3	4%
Substandard and falsified medicines	1	3%	2	6%	3	4%
Supply chain, stockouts and procurement	0	0%	3	9%	3	4%
Legislation and policy development	0	0%	2	6%	2	3%
Alternatives to antimicrobials (e.g., vaccines, probiotics, phages)	0	0%	0	0%	0	0%

Strategic Objective 5. Develop the economic case for sustainable investment that takes account of the needs of all countries, and increase investment in new medicines, diagnostic tools, vaccines and other interventions

40. Please provide your suggestions for the technical content under this strategic objective. For each suggestion, include the rationale and supporting evidence.

What specific new content is to be added?

	MS (44)		Non MS (97)		All (141)	
Sustainable investment	17	39%	42	43%	59	42%
Equity	10	23%	38	39%	48	34%

	MS (44)		Non MS (97)		All (141)	
Economic evaluation	10	23%	32	33%	42	30%
Global frameworks, governance, accountability	11	25%	31	32%	42	30%
Implementation barriers	12	27%	28	29%	40	28%
One Health	8	18%	30	31%	38	27%
Research and development	6	14%	32	33%	38	27%
Access	10	23%	25	26%	35	25%
Alternatives to antimicrobials	4	9%	19	20%	23	16%
Environmental impact	4	9%	17	18%	21	15%
Capacity building	5	11%	13	13%	18	13%
Innovative financing models	3	7%	15	15%	18	13%
Health system innovation	5	11%	12	12%	17	12%
IPC, WASH	4	9%	13	13%	17	12%
Antimicrobial Stewardship	5	11%	6	6%	11	8%
Behavior change	1	2%	9	9%	10	7%
Innovative Technologies, AI	1	2%	8	8%	9	6%
Surveillance	4	9%	5	5%	9	6%
Animal health & welfare	2	5%	6	6%	8	6%
Stakeholder engagement	1	2%	7	7%	8	6%
Technology transfer	2	5%	5	5%	7	5%
Antifungal, antiviral resistance	0	0%	2	2%	2	1%
Vaccine	1	2%	1	1%	2	1%
Financial risk & capital market alignment	0	0%	1	1%	1	1%
Gender and social determinants	0	0%	1	1%	1	1%
Workforce sustainability	0	0%	1	1%	1	1%

What content is to be modified or rephrased?

	MS (33)		Non MS (62)		All (95)	
Sustainable investment	4	12%	19	31%	23	24%
Research and development	4	12%	18	29%	22	23%
Economic evaluation	4	12%	16	26%	20	21%
Global framework, governance, accountability	9	27%	11	18%	20	21%
One Health	8	24%	10	16%	18	19%
Access	1	3%	14	23%	15	16%
Diagnostics	4	12%	10	16%	14	15%
Health system innovation	1	3%	13	21%	14	15%
Equity	2	6%	11	18%	13	14%
Implementation barriers	3	9%	10	16%	13	14%
Capacity building	2	6%	9	15%	11	12%
Vaccine	2	6%	7	11%	9	9%
Innovative financing models	0	0%	8	13%	8	8%
Stewardship	1	3%	7	11%	8	8%

	MS (33)		Non MS (62)		All (95)	
Alternatives to antimicrobials	4	12%	3	5%	7	7%
Environmental impact	4	12%	1	2%	5	5%
IPC, WASH	1	3%	4	6%	5	5%
Stakeholder engagement	0	0%	5	8%	5	5%
Behavior change	0	0%	3	5%	3	3%
Surveillance	2	6%	1	2%	3	3%
Innovative technologies, AI	0	0%	2	3%	2	2%

Section 6. Framework for action and any additional inputs

43. (For those who responded No or Partially to the previous question about the Framework for action) what would you suggest to update the Framework for Action?

	MS (36)		Non MS (116)		All (152)	
Address One Health coordination at all levels	9	25%	27	23%	36	24%
Include sustainable financing mechanisms	7	19%	20	17%	27	18%
Enhance NAPs implementation support	9	25%	17	15%	26	17%
Expand environmental sector integration	7	19%	18	16%	25	16%
Promote inclusive stakeholder engagement	4	11%	21	18%	25	16%
Strengthen governance and accountability	3	8%	20	17%	23	15%
Support innovation, research and development	6	17%	13	11%	19	13%
Expand plant health and agrifood coverage	6	17%	12	10%	18	12%
Integrate antimicrobial stewardship across sectors	4	11%	14	12%	18	12%
Embed SMART[58] actions and measurable indicators	4	11%	13	11%	17	11%
Operationalize monitoring and evaluation	1	3%	12	10%	13	9%
Update outdated terminology or timeframes	1	3%	9	8%	10	7%
Recognize and align with UNGA and political commitments	3	8%	6	5%	9	6%
Clarify sectoral roles and responsibilities	1	3%	6	5%	7	5%
Ensure access to quality antimicrobials and diagnostics	2	6%	5	4%	7	5%
Incorporate equity and vulnerable populations	2	6%	5	4%	7	5%
Strengthen subnational and regional implementation capacity	2	6%	3	3%	5	3%
Integrate AMR into emergency preparedness and resilience planning	1	3%	3	3%	4	3%
Explicitly include antifungal resistance	1	3%	1	1%	2	1%
Include companion animals and aquatic systems	0	0%	1	1%	1	1%

[58] There's a S.M.A.R.T. way to write management's goals and objectives. https://community.mis.temple.edu/mis0855002fall2015/files/2015/10/S.M.A.R.T-Way-Management-Review.pdf