

**DRAFT RECOMMENDATIONS OF THE AD HOC INTERAGENCY
COORDINATION GROUP ON ANTIMICROBIAL RESISTANCE**

(For public discussion prior to finalization)

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IACG | Interagency Coordination Group on
Antimicrobial Resistance

Draft recommendations of the Ad hoc Interagency Coordination Group on Antimicrobial Resistance for public discussion

Antimicrobial resistance is one of the world's most complex and serious health and development challenges, the impact of which is yet to be fully realized. It affects all countries and poses growing threats to human, animal and plant health; food production and food security; the environment, and economic development. The costs of antimicrobial resistance - to individuals and their families, health systems and economies - are alarming and expected to grow. Drug-resistant infections are already estimated to cause at least 700,000 deaths every year. Similarly, every year nearly 600,000 people develop tuberculosis (TB) that is resistant to rifampicin, the most effective first-line drug. In the absence of concerted global action, up to 10 million people may die annually by 2030 as a result of drug-resistant diseases. The economic costs of inaction against antimicrobial resistance will also grow. The total annual shortfall in gross domestic product (GDP) due to antimicrobial resistance could be as high as \$3.4 trillion by 2030, equivalent to the losses experienced during the 2008 global financial crisis. In sum, antimicrobial resistance is placing progress against many of the Sustainable Development Goals (SDGs) at grave risk.

Inadequate access to water, sanitation and hygiene, poor infection prevention and control measures, and weak health and environmental management systems – including lack of equitable access to affordable and quality-assured drugs, vaccines and diagnostics – all contribute to the spread of drug-resistant pathogens. In addition, the overuse and misuse of antimicrobials to promote growth and routinely prevent disease in healthy animals and crops without appropriate indication and the absence of good agricultural practices are contributing to the development and spread of antimicrobial resistance in both animals and humans. At the same time, there is inadequate innovation to address the challenges of antimicrobial resistance, including too few new antimicrobial and alternative medicines in the research and development pipeline. Production and supply chains for existing antimicrobials are also vulnerable, with very few producers, leading to shortages of key antimicrobials around the world. As a result, people presenting in health care facilities with drug-resistant infections cannot be effectively treated.

To overcome these challenges and prevent the further impact of drug-resistant infections caused by bacteria, viruses, fungi and parasites, bold and comprehensive actions are urgently required, employing a One Health approach that tackles antimicrobial resistance in the context of human, animal and plant health, as well as in food production and the environment. Based on the IACG's analysis of recommendations made in previous reports and current bottlenecks in the response to antimicrobial resistance, the actions most urgently needed fall within five broad areas: A) Accelerate progress in countries; B) Innovate to secure the future; C) Collaborate for more effective action; D) Invest for a sustainable response; and E) Strengthen global accountability and governance.

Guiding principles: As it developed its recommendations, the IACG was guided by the following principles:

- The recommendations should promote and support a One Health approach to antimicrobial resistance cutting across human, terrestrial and aquatic animal and plant health, as well as food production and the environment;
- The recommendations should focus on strengthening existing systems and mainstreaming of efforts to combat antimicrobial resistance so as to leverage gains across the SDGs;
- The recommendations should address major challenges identified in addressing antimicrobial resistance and build upon best practices across health, development, financing, and research and development;

- To the extent possible, the recommendations should not duplicate those made in previous reports, but instead focus on catalyzing the implementation of earlier recommendations by addressing key gaps and bottlenecks in the current response to antimicrobial resistance;
- The recommendations should support mobilization of action by all stakeholders, including governments, international organizations, academia, civil society and the private sector, at global, regional, national and local levels, with a strong emphasis on enabling country-level action and with due consideration to country-specific context, capacity and infrastructure; and
- The recommendations should be practical and feasible to implement, support a targeted response based on country context, and contribute to achieving significant impact against antimicrobial resistance.

A. ACCELERATE PROGRESS IN COUNTRIES

Aim of the recommendations in this section: *These recommendations emphasize the importance of building and sustaining effective and tailored national responses to address antimicrobial resistance through increased political commitment and more coordinated multisectoral efforts across the One Health spectrum, while also leveraging gains across the SDGs.*

Recommendation A1: The IACG calls on all Member States to ensure equitable and affordable access to existing and new quality-assured antimicrobials and their prudent use by competent, licensed professionals across human, animal and plant health.

This recommendation must be supported by efforts both to reduce the need for antimicrobials and improve access through:

- a. Lowering the prevalence of infection through clean water, sanitation and hygiene;
- b. Decreasing the likelihood of diseases and their spread through delivery of existing vaccines and strengthening infection prevention and control measures;
- c. Ensuring best practices in terrestrial and aquatic animal and plant health, food production and waste management;
- d. Supporting behaviour change through effective communication and incentives targeted at the public and professionals in human, terrestrial and aquatic animal and plant health, as well as food production and the environment;
- e. Developing national instruments based on international standards for equitable access to and prudent use of existing and new quality-assured antimicrobials in humans, animals, plants and food production, as well as waste and water management in health care, manufacturing and farming-related activities; and
- f. Strengthening national surveillance, regulatory and accountability mechanisms.

Considerations for this recommendation:

- The IACG recognizes that effective systems for infection prevention and control, including vaccination, clean water, sanitation and hygiene, as well as Good Management Practices, biosecurity and good animal welfare in farming, avert infections in health care and farm settings. These approaches will protect patients, health and farm workers, as well as animals and plants, thereby reducing the future need for antimicrobials, protecting the environment and ensuring sustainable food production. Furthermore, proper management and handling of soil, water, health facility and pharmaceutical waste, as well as manure used as fertilizer, can further reduce the spread of antimicrobial residues along the food production chain and in the environment.

- The IACG emphasizes that ensuring equitable and affordable access to and stewardship of existing and new quality-assured drugs, diagnostics and vaccines is essential for effective national responses to antimicrobial resistance. This can be achieved in several ways, including:
 - *Addressing shortages and stockouts:* Governments should establish national drug, vaccine and diagnostics shortage notification systems to allow them to take rapid action in relation to shortages and stockouts of these health products. WHO and OIE should provide guidance to countries on developing or improving existing national drug and vaccine shortage notification systems for human and animal health that are harmonized and employ the same definitions, approaches and methodologies, where appropriate.
 - *Effective national-level antibiotic demand forecasts:* Improved forecasting is needed in both human and animal health to improve access to antibiotics and to strengthen procurement and supply chain management. This will in turn support efforts by WHO and OIE to develop a global demand forecast model for antibiotics that can be shared with manufacturers and procurement agencies on a regular basis and made publicly available.
 - *Establishing antimicrobial production facilities:* Some governments or regional entities may consider establishing production facilities or contracting manufacturers to help mitigate shortages and ensure a resilient supply of antimicrobials, particularly antibiotics and vaccines for human and animal health, paying due consideration to manufacturing standards and quality assurance for health commodities.
 - *Providing affordable access:* Governments should establish policies, measures and mechanisms to provide existing and new drugs, diagnostics and vaccines at affordable prices, including to people who are unable to pay for them. This will ensure that the benefits of antimicrobials are made available to the population at large, especially those most in need of treatment, regardless of their capacity to pay.
 - *Pooled procurement mechanisms:* Leveraging existing pooled procurement mechanisms in human health and potentially establishing them for animal health could help to secure both the supply of quality-assured medicines and ensure predictability of demand for manufacturers.
 - *Tackling substandard and falsified medical products* is an important component of ensuring access to quality antimicrobials, including stewardship. Complementary efforts to improve antimicrobial resistance surveillance and supply chain mechanisms - including the implementation of low-cost technologies and track-and-trace systems - could help to address this problem in low- and middle-income countries. Furthermore, efforts to ensure Universal Health Coverage also promote access to quality-assured and appropriate use of antimicrobials and play a role in reducing the development of antimicrobial resistance.
- The prudent use of antimicrobials across the human, animal, plant and environmental health sectors requires appropriate attention to and investment in training, accreditation and regulation of professionals, including physicians, pharmacists, veterinarians and other specialists across human, terrestrial and aquatic animal and plant health, as well as in food production and the environment. The IACG recognizes that in settings where trained prescribers are in short supply, non-physicians (such as nurses, paramedics and community health workers) and veterinary paraprofessionals may also be trained and authorized to prescribe or administer some antimicrobial agents.

- The IACG emphasizes that there is an urgent need to strengthen national surveillance and regulatory frameworks and enforcement capacity in all countries to support effective national responses to antimicrobial resistance, including on the prudent use of antimicrobials and their sale, particularly over-the-counter and on the internet, as well as sound environmental and waste management practices. Surveillance systems should include a set of specific indicators to enable monitoring of access, availability and affordability of antimicrobials and related commodities.
- The IACG recognizes that efforts to achieve Universal Health Coverage and to expand basic and essential health services are critical to ensuring equitable and affordable access to quality-assured health products and the prudent use of antimicrobials. Because achieving Universal Health Coverage depends to a significant degree on the continued effectiveness of antimicrobials, these challenges must be addressed simultaneously.

Recommendation A2: The IACG calls on all Member States to accelerate the development and implementation of One Health National Antimicrobial Resistance Action Plans within the context of the SDGs that, at a minimum, include:

- a. Prioritized actions and interventions that are specific to the national context and that are costed and funded, including with adequate domestic resource allocations;
- b. Strengthening key national systems for infection prevention, monitoring, integrated surveillance, procurement of health commodities and waste management;
- c. Technical co-operation, capacity development, research and advocacy components, including support for champions at national and local levels to mobilize action on antimicrobial resistance; and
- d. Effective national coordination, accountability and governance mechanisms.

Considerations for this recommendation:

- This recommendation is relevant to all countries. However, the IACG recognizes that approaches to tackling antimicrobial resistance and the development and implementation of National Antimicrobial Resistance Action Plans differ among countries, particularly between high-income and low- and middle-income countries. These differences are based on country-specific context, capacity and infrastructure, and will determine the type and level of actions and interventions required to address antimicrobial resistance at national and local levels.
- Furthermore, such differences between countries should inform and help to define the mainstreaming of responses to antimicrobial resistance within sustainable development and social and political agendas across human, terrestrial and aquatic animal and plant health, food production and the environment at country level.
- The IACG notes that national actions on antimicrobial resistance are relevant to several SDGs, including those that relate to human health, food security, clean water and sanitation, as well as responsible consumption and production, illustrating the importance of mainstreaming action on antimicrobial resistance actions into national efforts to achieve the SDGs.
- The IACG further recognizes that cooperation and solidarity are required among all countries for an effective global response and to ensure that adequate financial and technical resources are available to support implementation of national action plans, including in low- and middle-income countries. Furthermore, such cooperation should consider the high burden and increased risk of

antimicrobial resistance in some countries, and efforts should be directed where the needs are greatest, and action will have the most impact.

- The IACG emphasizes that One Health integrated surveillance and monitoring systems need to be established, coordinated and integrated, covering human, terrestrial and aquatic animal and plant health, food production and the environment. To the extent possible, they should also provide harmonized or equivalent data that can be easily compared, exchanged, used and aggregated locally, nationally and globally. Building on recent efforts, the Tripartite agencies - working together with Member States and other organizations - need to develop and monitor core indicators that cut across human, animal, plant, food and environmental health.

Recommendation A3: The IACG calls on all Member States to phase out the use of antimicrobials for growth promotion, consistent with guidance from the Tripartite agencies (FAO, OIE and WHO), starting with an immediate end to the use of the Highest Priority Critically Important Antibiotic Agents (i.e. quinolones, third- and higher- generation cephalosporins, macrolides and ketolides, glycopeptides and polymyxins).

Considerations for this recommendation:

- The IACG recognizes that the use of antimicrobials in animal production may be as high as or exceed use in the human health sector. According to the 3rd OIE annual report on antimicrobial agents intended for use in animals (2019), 45 countries reported using antimicrobials for growth promotion, and 27 have no regulatory framework in place to address this challenge. The IACG emphasizes that this recommendation should be implemented by Member States as a matter of urgency and that it should be complemented by the adoption of global standards and best practices established by the Tripartite agencies and other international and national authorities.
- The IACG emphasizes that eliminating the use of the Highest Priority Critically Important Antibiotic Agents for growth promotion is only a first step towards reducing the overuse and misuse of antimicrobials in food production, including in both animals and crops.
- The IACG notes that while some countries continue to use antimicrobials for animal growth promotion and in crops, others - particularly low-income countries - experience difficulties in accessing effective antimicrobials to treat disease in animals. Moreover, both situations – excessive use and poor access - can co-exist in the same country. Although efforts to implement this recommendation should recognize these challenges in different countries, it is important that countries work together in a spirit of solidarity to address them. It is particularly important that all countries employ appropriate risk analysis - the process of hazard identification and risk assessment, management and communication - as described in the OIE Terrestrial Animal and Aquatic Animal Health Codes. Such risk analyses should be unbiased assessments that transparently present the evidence base for findings and recommendations and be subject to peer review.

B. INNOVATE TO SECURE THE FUTURE

Aim of the recommendations in this section: *The recommendations emphasize that current efforts to support research into and development of new antimicrobials, diagnostics, vaccines, waste management tools, and safe and effective alternatives to antimicrobials across the One Health spectrum remain inadequate and need to be intensified with sustained investment and increased scientific engagement and collaboration. They also aim to promote equitable and affordable access to and stewardship of new health products, through both existing and future global access initiatives.*

Recommendation B1: The IACG calls upon public, private and philanthropic donors and other funders to increase investment and innovation in new antimicrobials - particularly antibiotics, diagnostics, vaccines, waste management tools, and safe and effective alternatives to antimicrobials - for human, terrestrial and aquatic animal and plant health through:

- a. Financial and non-financial incentives strategically targeting the most important research and development needs, scientific challenges, and market barriers based on the principles of affordability, effectiveness, efficiency and equity, as outlined in the *2016 UN Political Declaration on Antimicrobial Resistance*; and
- b. Building upon existing Product Development Partnerships in human health and establishing more of them, particularly for terrestrial and aquatic animal and plant health.

Considerations for this recommendation:

- The IACG notes that the unclear market potential for antibiotics, diagnostics and vaccines discourages innovation, primarily due to the high cost of research and development and low success rates for new compounds, as well as uncertainty of revenue in terms of price and volume of new products. Accordingly, additional, sustained investments and collaborations are needed on the part of governments, the private sector and civil society to accelerate research and development, pull new products through to market and ensure effective stewardship.
- The IACG reiterates that all research and development efforts to address antimicrobial resistance should be needs-driven, evidence-based and guided by the principles of affordability, effectiveness, efficiency and equity.
- The IACG recognizes the need to develop and provide financial and non-financial market incentives for research and development to address antimicrobial resistance and recommends that these incentives should be aligned with defined research and development needs and priorities and appropriately targeted to address bottlenecks and market barriers across the product life cycle from fundamental research to registration and equitable and affordable access and stewardship.
- The IACG acknowledges the important and encouraging role of existing international mechanisms to support research and development in human health, including CARB-X, Global Antibiotic Research and Development Partnership, Innovative Medicines Initiative, Joint Programming Initiative on Antimicrobial Resistance (JPI-AMR) and the Coalition for Epidemic Preparedness Innovations (CEPI). It recommends full and sustained funding for such initiatives and other approaches to improve innovation and affordable access to health products through public, private and philanthropic sources. The IACG emphasizes the need to draw upon lessons from

successful product development partnerships in human health and to replicate them in terrestrial and aquatic animal and plant health.

- The IACG underlines that additional funding combined with financial and non-financial incentives is particularly required to bring innovative products from fundamental research to registration and implementation, including to accelerate clinical trials in humans and experimental work in animals and plants, and to enhance the role of small and medium enterprises in research and development.
- The IACG recognizes that beyond product development, funding is also required for implementation and operational research, including on mechanisms of transmission of drug resistant infections, implementation of effective approaches, behavior change communication, infection prevention, prudent use of antimicrobials and effective soil, water and waste management.

Recommendation B2: The IACG recommends that existing and future global access initiatives should promote and support equitable and affordable access to existing and new antimicrobials, diagnostics, vaccines, waste management tools and safe and effective alternatives to antibiotics for human, terrestrial and aquatic animal and plant health.

Considerations for this recommendation:

- The IACG notes that there are few global access initiatives to ensure equitable and affordable access to existing and new antimicrobials, diagnostics, vaccines, waste management tools and safe and effective alternatives to antibiotics for human, terrestrial and aquatic animal and plant health, particularly to address the needs of low-income countries. The IACG therefore emphasizes the need to leverage existing global access and scale-up initiatives in human health (e.g. CEPI, Gavi, Global Fund to Fight AIDS, Tuberculosis and Malaria, Medicine Patent Pool, Unitaid) wherever possible to ensure access to existing and new antimicrobials, diagnostics and vaccines to address antimicrobial resistance.
- The IACG recognizes the need to develop new global initiatives to ensure access to existing and new antimicrobials, diagnostics, vaccines, waste management tools and safe and effective alternatives to antibiotics in terrestrial and aquatic animal and plant health, including for low-income countries.

Recommendation B3: The IACG calls upon public, private and philanthropic research funders and other stakeholders to build upon current research and development efforts and strengthen research collaboration in a One Health context by:

- a. Undertaking coordinated global mapping of research and development activities and funding to address antimicrobial resistance;
- b. Establishing and maintaining a platform for sharing information on research and compounds in development in both ongoing and completed research and development activities;
- c. Promoting synergies and opportunities for collaboration among funders and researchers in human, animal and plant health, and the environment; and
- d. Promoting openness and transparency in data from all research and monitoring and surveillance sources.

Considerations for this recommendation:

- The IACG recognizes past and current efforts to promote and enhance research collaboration and interdisciplinary approaches to address antimicrobial resistance and to map research activities, including through JPI-AMR, the Global Antimicrobial Resistance Research and Development Hub and the STAR-IDAZ International Research Consortium on Animal Health, as well as in the private sector. However, it emphasizes that lack of information, collaboration and transparency across different research and development activities, funding agencies and partners continue to act as significant barriers to advancing research and development on antimicrobial resistance.
- The IACG notes that information sharing, collaboration and coordination of research and development through ongoing and future initiatives across all sectors will help in identifying global research and development priorities, ensure that funding addresses those priorities along the full research and development pipeline, enable gaps to be identified and monitored, maximize the impact of research and development, and help to reduce costs and duplication of effort.
- The IACG recommends that, wherever possible, existing research and development platforms for animal and human health, and for the environment, should formalize information sharing and collaboration arrangements.

C. COLLABORATE FOR MORE EFFECTIVE ACTION

Aim of the recommendations in this section: While multisectoral efforts involving all stakeholders are essential to tackle the many challenges posed by antimicrobial resistance, the engagement of civil society and the private sector in the response is inadequate. These recommendations aim to strengthen the systematic engagement of these stakeholders to optimize their contributions to the response to antimicrobial resistance, including working with governments.

Recommendation C1: The IACG calls for the systematic and meaningful engagement of civil society groups and organizations as key stakeholders in the One Health response to antimicrobial resistance at global, regional, national and local levels through:

- a. Strengthening their roles in accountability, advocacy, monitoring progress and ensuring prudent use of antimicrobials;
- b. Promoting synergies with consumer and civil society groups active in other sectors, including in climate change and the environment, responses to HIV, TB and malaria, Universal Health Coverage and other aspects of the SDGs; and
- c. Provision of political, financial and technical support for civil society organizations to enhance their engagement, including for work with governments.

Considerations for this recommendation:

- The IACG emphasizes that closer engagement of civil society is essential to advance efforts against antimicrobial resistance at global, regional, national and local levels. This includes medical, veterinary and other professional societies, non-governmental and community-based organizations, consumer rights protection groups, associations of farmers, trade unions, food sector federations, and health and environmental advocates and service providers.
- The IACG notes that civil society groups have a particularly important role to play in ensuring transparency of governance and monitoring, undertaking advocacy and communications and enabling citizens to become agents of change. Depending on country situations, civil society actors can be strong drivers for mobilization and action to address antimicrobial resistance. For example, consumer groups have advocated successfully for responsible antibiotic use in food production by some companies, mainly in high-income countries. In other countries, farmers' groups have mobilized to respond to the challenges that antimicrobial resistance poses to their livelihoods. The IACG notes that efforts are particularly needed to strengthen the engagement of civil society stakeholders from the environment sector in efforts to address antimicrobial resistance.
- Experiences from advanced global health initiatives that address HIV, TB and malaria, and from the climate change and environment sectors, can be drawn upon to advance this recommendation. The IACG particularly emphasizes the need for stakeholders engaged in antimicrobial resistance to work with these groups to identify synergies and opportunities to achieve shared gains by addressing antimicrobial resistance in their advocacy and programming efforts.
- The IACG highlights the importance of providing political, financial and technical support to civil society organizations to enhance their engagement, including to work effectively with governments and to ensure that their efforts are aligned with and contribute to evidence-based national policies and approaches. Innovative approaches to financing the engagement of community-based organizations include the Collaborative Fund for HIV Treatment Preparedness,

Global Fund Advocates Network, the Civil Society Challenge Facility of the Stop TB Partnership and the Global Environment Facility's Small Grants Programme. These and other initiatives have successfully mobilized community action and ownership in their respective fields and have significant potential to do the same across sectors in the response to antimicrobial resistance.

Recommendation C2: The IACG calls for the systematic and meaningful engagement of and enhanced action by the private sector as key stakeholders in the One Health response to antimicrobial resistance at global, regional, national and local levels in order to ensure:

- a. Affordable access, prudent use and stewardship of antimicrobials;
- b. Ethical production, distribution and marketing practices, including through environmentally sustainable production and waste management and the elimination of inappropriate incentives to sell antimicrobials;
- c. Engagement by the private sector in collaborative efforts to collect, analyze and use data and realign economic incentives to improve production, distribution and marketing practices; and
- d. Contributions to addressing antimicrobial resistance through testing of innovative approaches, corporate social responsibility, and similar initiatives.

Considerations for this recommendation:

- The IACG recognizes the diverse spectrum of private sector actors that need to be engaged in the fight against antimicrobial resistance, including pharmaceutical, health technology and pesticide/biocide industries, food producers and retailers, and banking, insurance and finance institutions.
- The IACG also recognizes that there have been some encouraging efforts by the private sector to engage in the response to antimicrobial resistance, including in voluntary, collaborative approaches to prudent distribution and use of antibiotics, and through organized industry collaboration related to both human and animal health. However, the IACG emphasizes that the urgency and the threat posed by antimicrobial resistance demand significantly more action by and enhanced engagement of the private sector to advance efforts against antimicrobial resistance at global, regional and national levels.
- In addition to the activities described in the recommendation, private sector actors in human, plant, and animal health, as well as in the food production and retail sectors, have important contributions to make in the areas of financing and resource mobilization; information and data sharing; monitoring and surveillance; behaviour change and communication; advocacy and work with government on key policy issues; research and development, and effective environmental management.

D. INVEST FOR A SUSTAINABLE RESPONSE

Aim of the recommendations in this section: *Financing is a critical bottleneck to advancing the global response against antimicrobial resistance. These recommendations emphasize the need for innovative approaches to mainstream antimicrobial resistance-related activities and leverage resources from existing funding streams, as well as to mobilize new funding. The recommendations further underline that domestic financing commitments by national governments are essential to advance priority actions and ensure long-term, sustainable responses to antimicrobial resistance.*

Recommendation D1: The IACG calls upon governments and global, regional, national, bilateral and multilateral financing and development institutions and banks to systematically apply an antimicrobial resistance and One Health “lens” when making investments through:

- a. Official Development Assistance;
- b. South-South cooperation;
- c. The International Development Association (IDA) replenishment process from IDA19 onwards;
- d. Financial support, grants, loans, credits and insurance for terrestrial and aquatic animals and plants, health, development, food systems, manufacturing of health products, the environment and other relevant areas.

Considerations for this recommendation:

- The IACG notes that the direct and indirect costs to the health sector and food production systems of treating and managing drug-resistant infections are already significant and are likely to increase in the absence of concerted action. These costs may be offset by adequate investments to lower the burden of infections through water and sanitation, hygiene, vaccination and infection prevention and control measures. Overall, the IACG emphasizes the need to further leverage existing funding streams and mobilize new resources to strengthen existing efforts and ensure a more effective and sustainable global response to antimicrobial resistance. It underlines that such investments not only help to tackle the challenges currently posed by antimicrobial resistance but will also avert the need for even greater investments in the future and mitigate the economic impact of antimicrobial resistance.
- The IACG notes that there is an urgent need to elevate the challenges of antimicrobial resistance as crucial elements of the global social, economic development and financing agenda, including the SDGs. The spread of untreatable drug-resistant infections poses a serious threat to the achievement of the SDGs, including those that relate to human health, food security, clean water and sanitation, and responsible consumption and production. The IACG recognizes the importance and urgency of developing robust analyses and indicators that capture both the direct and indirect impact of antimicrobial resistance on efforts to achieve the SDGs.
- The IACG notes that experiences of mainstreaming gender and climate change into grants and loans of bilateral agencies, the World Bank and regional development banks demonstrate the feasibility of introducing a similar approach of applying an antimicrobial resistance and One Health “lens” to existing funding streams and approaches. Applying this “lens” requires measurable accountability that these investments do mitigate—and do not worsen—the emergence, prevalence and impact of antimicrobial resistance.

- The IACG recognizes the indirect benefits that broader financial investments in areas related to human, terrestrial and aquatic animal and plant health, as well as food production, can have in addressing antimicrobial resistance. Applying an antimicrobial resistance and One Health “lens” to and monitoring such investments will help to inform and leverage further financing for antimicrobial resistance.

Recommendation D2: The IACG emphasizes the need for increased investment in the global response to antimicrobial resistance. It urges existing and future financing mechanisms in human, animal and plant health, as well as food production and the environment - including Gavi – the Vaccine Alliance, the World Bank, the Global Fund to Fight AIDS, Tuberculosis and Malaria, Global Financing Facility, Multilateral Climate Funds, Unitaid, as well as future financing streams for Universal Health Coverage and other priority development issues, and their donors - to give antimicrobial resistance greater priority in their resource allocations. It further calls upon public, private and philanthropic donors in human, animal and plant health, as well as food production and the environment, to increase funding to contribute to addressing antimicrobial resistance, including to support implementation of National Antimicrobial Resistance Action Plans.

Considerations for this recommendation:

- The IACG notes that significant opportunities exist within existing human health financing mechanisms - notably Gavi - the Vaccine Alliance, the Global Fund to Fight AIDS, Tuberculosis and Malaria and Unitaid - to contribute to the external financial needs of low-income countries in implementing National Antimicrobial Resistance Action Plans.
- The IACG acknowledges both the added value of and the need to further strengthen financing mechanisms dedicated to antimicrobial resistance, such as JPI-AMR, which is supported by 27 Member States and the Fleming Fund of the UK government - to advance the global response, particularly through support for implementation in low-income countries while also ensuring long-term sustainability through domestic financing.
- The IACG highlights the importance of increased engagement by the private sector and other stakeholders to advance innovative financing concepts for antimicrobial resistance, including livestock insurance programs for transitioning of animal husbandry practices, accredited drug dispensing outlets and social impact bonds.
- The IACG emphasizes that efforts to leverage resources within existing funding mechanisms must be supported by effective global, regional and national governance and coordination mechanisms to help direct limited resources to agreed priorities and goals across the One Health spectrum.

E. STRENGTHEN ACCOUNTABILITY AND GLOBAL GOVERNANCE

Aim of the recommendations in this section: Stronger and sustained global leadership and advocacy and a more powerful global narrative and vision are all needed to advance the global response to antimicrobial resistance. These recommendations promote the creation of a platform that will be instrumental in raising the profile and urgency of addressing antimicrobial resistance, building and maintaining political momentum and public support, enabling more comprehensive monitoring of the science and evidence related to antimicrobial resistance, and ensuring accountability among all stakeholders.

Recommendation E1: The IACG recommends the urgent establishment of a One Health Global Leadership Group on Antimicrobial Resistance, supported by a Secretariat, to:

- a. Maintain urgency, public support, political momentum and visibility of the antimicrobial resistance challenge on the global agenda, and set targets;
- b. Advocate for action, including support for the expanding work of the Tripartite agencies (FAO, OIE and WHO), UN Environment (UNEP) and other international and regional entities;
- c. Monitor and report on progress, gaps and accountability in the global response to antimicrobial resistance;
- d. Expand multi-stakeholder engagement by establishing a partnership platform with the participation of Member States, UN agencies, international and intergovernmental organisations and regional entities, civil society, the private sector, researchers and other key stakeholders to develop and work towards a shared global vision and coordinated action on antimicrobial resistance;
- e. Provide advice and guidance on reports of the Independent Panel on Evidence for Action against Antimicrobial Resistance (recommendation E2);
- f. Monitor and advocate for the inclusion of antimicrobial resistance and a One Health “lens” in investments and programmes of major financing instruments for agriculture, health, development, food production and other relevant areas (recommendation D1);
- g. Identify priorities for research and development and facilitate implementation research in a One Health context; and
- h. Define the financial needs and gaps for the global response to antimicrobial resistance, including the costs of inaction and anticipated returns on investment.

Considerations for this recommendation:

- The SDGs cannot be delivered if antimicrobial resistance is not addressed with greater urgency. The IACG stresses the importance of increasing and maintaining the urgency and visibility of the need to address antimicrobial resistance on the global agenda through political and public support, and target setting. The One Health Global Leadership Group on Antimicrobial Resistance will play a pivotal role in addressing these challenges.
- The IACG recognizes that its establishment has played an important role in ensuring that antimicrobial resistance is prominent on the global health and development agenda, including in the work of the Tripartite agencies (FAO, OIE and WHO). However, the IACG mandate is time-limited and the scale of its efforts are insufficient considering the global threat posed by antimicrobial resistance. Therefore, the complex responses that are required need to be addressed over the long-term through the establishment of a One Health Global Leadership

Group. Furthermore, the IACG notes that other models in health and development illustrate the practicality and feasibility of establishing a Global Leadership Group on Antimicrobial Resistance. Examples include:

- *The Global Preparedness Monitoring Board for Health Emergencies* is co-convened by WHO and the World Bank to monitor progress, identify gaps and advocate for sustained, effective action to ensure global preparedness for disease outbreaks and other health emergencies. The Board succeeded the UN Secretary-General's Global Health Crises Task Force, created in 2016 in response to the West Africa Ebola outbreak.
 - *Scaling Up Nutrition (SUN) Movement Lead Group*, which has overall responsibility for the Movement's progress towards addressing global under-nutrition. The SUN Lead Group succeeded the High-Level Task Force on Food and Nutrition Security, established by the UN Secretary-General in 2008. A high-level Lead Group was established in 2012 with membership nominated by the Secretary-General and is supported by a Coordinator and Secretariat based in Geneva. The SUN Movement Executive Committee acts on behalf of the SUN Movement Lead Group to oversee development and implementation of the Movement's strategy.
 - The *Committee on World Food Security (CFS)* reporting to the UN General Assembly through the Economic and Social Council and the FAO Conference brings together stakeholders working on food security and nutrition globally. Created in 1974 as an intergovernmental UN body, the CFS currently involves 130 Member States and includes both a Civil Society Mechanism and a Private Sector Mechanism. It is supported by a multi-agency Secretariat comprised of FAO, the International Fund for Agricultural Development and the World Food Programme and includes a High-Level Panel of Experts.
- The IACG proposes that the One Health Global Leadership Group for Antimicrobial Resistance be composed of a small group of current and former Heads of State, Ministers of Agriculture, Health and Environment, Heads of the Tripartite agencies, other UN and international agencies, Heads of Regional Banks and other prominent global leaders and eminent persons representing human, animal and plant health, as well as food production and the environment. The One Health Global Leadership Group will need to be supported by a small Secretariat that also develops and supports a partnership platform for global coordination and action.
 - The IACG reiterates the urgent need to develop a shared global vision, narrative and targets to tackle antimicrobial resistance and mobilize all relevant stakeholders, including Member States, UN agencies, international and intergovernmental organisations and regional entities, civil society, the private sector, and researchers, and to support country-level action. The IACG recommends that the One Health Global Leadership Group should establish and support a constituency-based body with diverse representation (e.g. governments, private sector and civil society representing human, animal, plant and environment health, as well as agriculture and food production) to develop and implement a shared global vision, narrative and targets.
 - The IACG notes that a partnership platform, with support from the Secretariat, would create opportunities to collectively address diverse areas of importance by all stakeholders, serve as a venue for information sharing and collaboration, and promote leadership by key partners around the shared global vision and narrative. This is consistent with existing models such as the End Malaria Partnership and the Partnership for Maternal, New born & Child Health. The Secretariat of the Global Leadership Group and partnership platform could also provide support to the Independent Panel on Evidence for Action against Antimicrobial Resistance [Recommendation E2].

Recommendation E2: The IACG requests the Secretary-General, in close collaboration with the Tripartite agencies (FAO, OIE and WHO), UNEP and other international organizations, to convene an Independent Panel on Evidence for Action against Antimicrobial Resistance in a One Health context to monitor and provide Member States with regular reports on the science and evidence related to antimicrobial resistance, its impacts and future risks, and recommend options for adaptation and mitigation.

Considerations for this recommendation:

- The IACG notes that limited data and the lack of targets, as well as inadequate expertise and in some cases limited consensus on approaches to addressing antimicrobial resistance and its associated threats across the One Health spectrum, present key challenges that hamper global progress. There is an urgent need to shape the global antimicrobial resistance agenda to stimulate the generation of evidence and its translation and dissemination into policy change and effective interventions.
- The IACG recognizes the need for an Independent Panel on Evidence for Action against Antimicrobial Resistance to provide robust and authoritative assessments of the science, data and evidence related to antimicrobial resistance across all sectors, assess its impacts and future risks and recommend options for adaptation and mitigation to governments and all stakeholders in the form of periodic reports.
- The IACG notes that the composition of the Independent Panel should include representation across the One Health spectrum, including experts from human, terrestrial and aquatic animal and plant health as well as the environment, food production and food safety sectors.
- The IACG notes that the Independent Panel on Evidence for Action against Antimicrobial Resistance should draw on the experiences and lessons of similar, existing entities, including the Intergovernmental Panel on Climate Change, the Joint FAO/WHO Expert Committee on Food Additives, and the Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment. The costs of convening experts, commissioning expert analysis, and maintaining Secretariat functions are anticipated to be modest.

Recommendation E3: The IACG requests the Tripartite agencies (FAO, OIE and WHO) together with UNEP and other UN agencies, in the context of UN reform, to further strengthen joint One Health action, based on country priorities and needs, by enhancing their organizational capacity and providing adequate and sustainable core funding for antimicrobial resistance-related activities in order to:

- a. Integrate antimicrobial resistance-related activities into country UN Development Assistance Frameworks;
- b. Provide and update effective normative guidance, standards and tools when needed;
- c. Advise on priority evidence-based interventions and actions;
- d. Provide coordinated technical co-operation and capacity building, including One Health regional platforms for technical co-operation; and
- e. Guide, support, monitor and evaluate implementation, including on infection prevention, integrated surveillance, data quality and harmonization, risk assessment, and demand forecasting and supply management.

Considerations for this recommendation:

- The IACG acknowledges the critical mandate of the Tripartite agencies (FAO, OIE and WHO) and Codex Alimentarius in providing Member States with normative guidance, standard and tools to tackle antimicrobial resistance for human, aquatic and terrestrial animal and plant health, as well as in food production and food safety. The IACG also recognizes the important role of UNEP in addressing environment-related antimicrobial resistance issues. Other UN and international agencies have roles to play in accelerating action against antimicrobial resistance, including at country level, for example, through UN Development Assistance Frameworks.
- The IACG applauds recent positive developments from the Tripartite agencies (FAO, OIE and WHO), including the signing of a Memorandum of Understanding and a joint workplan that includes UNEP. However, the IACG believes that the response of the Tripartite agencies (FAO, OIE and WHO) needs to be stepped up and requires further consolidation and strengthening through enhanced organizational capacity and commitment of additional human and financial resources, including adequate and sustainable core funding for their activities related to antimicrobial resistance.
- The IACG emphasizes that formalizing the antimicrobial resistance-related core and shared roles and responsibilities of the Tripartite agencies (FAO, OIE and WHO) and UNEP based on their mandate in their respective sectors will facilitate collaborative and coordinated action. For example, the Tripartite agencies (FAO, OIE and WHO) and UNEP can collectively define key antimicrobial resistance-related activities which they will undertake separately, jointly or in collaboration with other UN and international agencies.
- The IACG recognizes that lessons can be drawn from experience and best practice models and platforms of the Tripartite agencies (FAO, OIE and WHO) within the One Health context that were demonstrated in responses to zoonoses and emerging infections. These experiences can be used to guide and further strengthen the Tripartite agencies' response to antimicrobial resistance through building national capacity, creating a platform and repository to share best practices and materials (e.g. in communications, integrated surveillance, stewardship and prudent use) and developing tools to support the implementation of national action plans.
- The IACG recommends that lessons should also be drawn from other areas with advanced global responses, such as TB, HIV, malaria and the Joint External Evaluations of the International Health Regulations. For example, the Tripartite agencies and UNEP in collaboration with other stakeholders including civil society and the private sector could conduct Joint Periodic Review missions on antimicrobial resistance every three to five years within a One Health context that are complemented by regular monitoring in priority countries. Such Joint Reviews provide national advocacy opportunities and a useful model for advancing action and impact at country level, including to enhance accountability. Regional models for technical cooperation and coordination can also inform efforts to address against antimicrobial resistance. For example, the UNAIDS regional technical support facilities and the TBTEAM mechanism of WHO provide technical support to countries on HIV and TB.

Recommendation E4: The IACG recognizes the ongoing process led by Member States to develop the *Global Development and Stewardship Framework to Combat Antimicrobial Resistance* and urges the Tripartite agencies (FAO, OIE and WHO) and UNEP to expedite its development in line with the scope described in the 2015 World Health Assembly resolution on antimicrobial resistance (WHA68.7). As Member States finalize this process, they should also consider the need for new international instruments.

Considerations for this recommendation:

- The IACG acknowledges the current debates and discussions about binding or non-binding international instruments to combat antimicrobial resistance and recognises the enormous challenge of developing and negotiating such international instruments among Member States. The IACG recommends that priority be given to adopting and implementing global standards and best practices established by the Tripartite agencies (FAO, OIE and WHO) and other international and national authorities, and that the current debates and discussions should not distract from this priority.
- The IACG recognizes that the ongoing process of developing the *Global Development and Stewardship Framework to Combat Antimicrobial Resistance* led by Member States with facilitation by the Tripartite agencies (FAO, OIE and WHO) and UNEP has not yet been finalized. The Framework was first called for in the 2015 World Health Assembly resolution on antimicrobial resistance and later in the 2016 Political Declaration on antimicrobial resistance. The IACG therefore urges Member States, the Tripartite agencies (FAO, OIE and WHO) and UNEP to bring the development of the Framework to a conclusion as soon as possible consistent with the scope described in the 2015 World Health Assembly resolution and with due consideration and inclusion of relevant recommendations in this report.
- The IACG recognizes that ongoing discussions and finalization of the process to develop the *Global Development and Stewardship Framework to Combat Antimicrobial Resistance* can be used as an initial platform by Member States to advance a stepwise approach towards potential new, binding or non-binding international instruments. Such instruments may need to include a stronger focus on supporting the distribution and appropriate use of existing and new antimicrobial medicines, diagnostics, vaccines and other interventions, while also preserving existing antimicrobial agents, including using the WHO ACCESS, WATCH and RESERVE categorization of antibiotics.