

The Independent Panel on Evidence for Action against Antimicrobial Resistance: Building a Science-Policy Interface Fit for the Twenty-First Century

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Science-policy interfaces (SPIs) are an increasingly important feature of the United Nations system, helping to generate, assess and mobilize scientific knowledge for policymakers. Recent efforts to establish new SPIs in areas including artificial intelligence, chemicals, waste and pollution, and antimicrobial resistance demonstrate growing demand for these institutions. Yet questions remain about how SPIs should be designed to ensure they are effective, adaptable and able to support policy decisions. Convened by the Global Governance Innovation (GGI) Platform, this collection brings together four experts who examine key design considerations, including governance structures, participation, institutional learning and knowledge uptake. Together, the contributions highlight lessons for building SPIs that can effectively support global governance challenges.

The widespread defunding of multilateral institutions coupled with the rise of algorithmically fuelled disinformation has raised doubts about whether the traditional science-policy interface (SPI) model is still viable in an increasingly isolationist world. Despite these concerning trends, those striving to catalyse stronger connections between the disparate worlds of policy and science cannot be content to simply defend existing scientific institutions. Rather, we must demonstrate that the SPI model can be used to address the emerging global challenges of our time.

Antimicrobial resistance (AMR), which is now causing over 1 million deaths globally and is expected to reduce global average life expectancy by 1.8 years within a decade, is emblematic of these challenges.¹ A forthcoming Independent Panel on Evidence for Action against AMR (IPEA) is a rare opportunity to demonstrate that a multilateralism of the twenty-first century can bridge political divides and sectoral interests to collaboratively confront collective action problems that no one country can tackle alone.

A Complex Global Challenge

AMR is a natural process through which microbes such as bacteria, viruses, fungi and parasites become resistant to the medicines modern society relies on.² Resistance is accelerated by the overuse and misuse of antimicrobials in human medicine, animal medicine and agri-food systems, with complex environmental interactions.³ This means that it is a “One Health” challenge involving multiple cross-cutting sectors, exemplified by the \$575 billion in cumulative global GDP losses expected by 2050 due to the effects of AMR on livestock production.⁴

It is also a challenge that exemplifies deep-seated inequities between countries that have enjoyed generations of early access to lifesaving medical technologies, and those that are expected to suffer the consequences of the misuse of these technologies. Even though low- and middle-income countries are historically responsible for far less use of antimicrobials than high income countries, they now bear a higher burden of disease associated with AMR.⁵ This is further exacerbated by the fact that more people are dying from the lack of access to antimicrobials than from resistance itself.⁶

1 GBD 2021 Antimicrobial Resistance Collaborators, "Global burden of bacterial antimicrobial resistance 1990-2021: a systematic analysis with forecasts to 2050", *The Lancet*, vol. 404, No. 10459 (September 2024), pp. 1199–1226. Available at [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(24\)01867-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(24)01867-1/fulltext); Global Leaders Group, "Estimating the return on investment from tackling antimicrobial resistance", 2024. Available at <https://amrleaders.org/resources/annex-to-the-glg-report>.

2 Clare I.R. Chandler, "Current accounts of antimicrobial resistance: stabilisation, individualisation and antibiotics as infrastructure", *Palgrave Communications*, vol. 5, No. 53 (May 2019). Available at <https://www.nature.com/articles/s41599-019-0263-4#citeas>.

3 Isaac Weldon and Steven J. Hoffman, "'Fit for purpose?' assessing the ecological fit of the social institutions that globally govern antimicrobial resistance", *Perspectives on Politics*, vol. 22, No. 4 (2024), pp. 1157–1178. Available at <https://www.cambridge.org/core/journals/perspectives-on-politics/article/fit-for-purpose-assessing-the-ecological-fit-of-the-social-institutions-that-globally-govern-antimicrobial-resistance/ODDD28211F517CE82C73E126D6F184C6>.

4 Birhanu A. Adamie and others, *Forecasting the Fallout from AMR: Economic Impacts of Antimicrobial Resistance in Food-Producing Animals* (World Organisation for Animal Health, 2024). Available at <https://www.woah.org/en/document/forecasting-the-fallout-from-amr-economic-impacts-of-antimicrobial-resistance-in-food-producing-animals/>.

5 GBD 2021 Antimicrobial Resistance Collaborators, "Global burden of bacterial antimicrobial resistance 1990-2021: a systematic analysis with forecasts to 2050".

6 Idemudia I. Otaigbe, "Mitigating inequitable access to appropriate antibiotics in low- and middle-income countries", *JAC-Antimicrobial Resistance*, vol. 7, No. 2 (April 2025). Available at <https://pubmed.ncbi.nlm.nih.gov/40276025/>.

All these interconnected challenges could be mitigated if we had the ability to develop new antimicrobials and rapidly scale their regulatory approval and global distribution at a faster rate than the rate of development of resistance. Unfortunately, investment in the antimicrobial innovation pipeline has nearly dried up, with the few small- and medium-sized enterprises still investing in novel antibiotic development facing bankruptcy even after a successful new treatment can be developed.⁷ This makes AMR a collective action problem – resistant microbes know no borders, antimicrobial effectiveness is a shared and depletable resource, and there are almost no financial rewards to develop new antibiotics.⁸

From the Petri Dish to the World Stage

Drug resistance has been recognized for nearly as long as antibiotics have existed, with Sir Alexander Fleming warning against this danger as far back as his 1945 Nobel Lecture.⁹ Following decades of steady but often siloed progress on the rational use of antibiotics and issues like multi-drug resistant tuberculosis, the modern global governance of AMR can largely trace its roots to the adoption of a Global Action Plan to address AMR by the World Health Assembly in 2015.¹⁰

Following this accelerated global momentum, a United Nations Interagency Coordination Group called for the establishment of a Global Leaders Group, a Multi-Stakeholder Partnership Platform, and a SPI for AMR in 2019.¹¹ More recently, the Political Declaration on AMR, adopted at the 2024 United Nations General Assembly, invited the Quadripartite organizations – composed jointly of the Food and Agriculture Organization, United Nations Environment Programme, World Health Organization and World Organization for Animal Health – to urgently establish the Independent Panel on Evidence for Action against AMR (IPEA).¹²

7 Andrew C. Singer and others, "(Inter)nationalising the antibiotic research and development pipeline", *The Lancet Infectious Diseases*, vol. 20, No. 2 (February 2020). Available at <https://pubmed.ncbi.nlm.nih.gov/31753765/>.

8 Isaac Weldon and others, "Analyzing antimicrobial resistance as a series of collective action problems", *Policy Studies Journal*, vol. 52, No. 4 (2024). Available at <https://onlinelibrary.wiley.com/doi/full/10.1111/psj.12552>.

9 R. Andrew Seaton, "Fleming's legacy", *JAC-Antimicrobial Resistance*, vol. 7, No. 5 (2025). Available at <https://pmc.ncbi.nlm.nih.gov/articles/PMC12551377/>.

10 World Health Organization, *Global Action Plan on Antimicrobial Resistance* (WHO, 2015). Available at <https://www.who.int/publications/i/item/9789241509763>; Scott H. Podolsky, *The Antibiotic Era: Reform, Resistance, and the Pursuit of a Rational Therapeutics* (Baltimore, Maryland, Johns Hopkins University Press, 2015).

11 Interagency Coordination Group on Antimicrobial Resistance, *No time to wait: Securing the future from drug-resistant infections* (WHO 2019). Available at <https://www.who.int/publications/i/item/no-time-to-wait-securing-the-future-from-drug-resistant-infections>.

12 United Nations, "Political Declaration of the High-level Meeting on Antimicrobial Resistance", 2024. Available at <https://www.un.org/pga/wp-content/uploads/sites/108/2024/09/FINAL-Text-AMR-to-PGA.pdf>.

The Quadripartite organizations were invited to develop this new interface within one year, in parallel to the negotiation of an updated 2026 AMR Global Action Plan. In addition to the tight timeline, this required overcoming four significant challenges: bridging sectors and disciplines to deal with the epistemic complexity of AMR, developing a sustainable financing model, balancing scientific independence with policy relevance, and building equity into the structure and science of this new SPI.

A Science-Policy Interface Built for the Twenty-First Century

Although the final terms of reference have yet to be approved, the challenges that are set to face the IPEA are becoming increasingly clear.

First, scientific review methods that bridge disciplines will need to be developed. The latest draft of the IPEA's founding documents indicate that it will be tasked with assessing and facilitating the generation and use of multisectoral, policy-relevant scientific evidence to support Member States, and take a One Health approach to conduct horizon scanning, evidence-based assessments, knowledge management and information sharing and policy support.¹³

The multisectoral and multidisciplinary nature of AMR means that the evidence needed to generate these products will emerge from diverse scientific communities and government ministries that rarely interact and come with their own priorities and biases. Luckily, the AMR community can learn from the experience of other SPIs, including those from environmental governance, to build in proven strategies like transparent expert selection, contestability mechanisms and building legitimacy through public engagement.¹⁴

Second, as with any SPI, sustainable funding will be needed to allow IPEA to conduct its work in the decades to come. Seed funding has been pledged by the European Commission, the United Kingdom and Saudi Arabia,¹⁵ but there are no guarantees of further financing if IPEA cannot demonstrate its value to the international community. Early indications are that the IPEA will rely on financing from voluntary contributions without conditionalities or earmarking, as well as in-kind contributions from governments.

13 Quadripartite Joint Secretariat on AMR, *Independent Panel on Evidence for Action against Antimicrobial Resistance (IPEA) founding document*, draft 0 (WHO, 2025). Available at [https://www.qjsamr.org/publications/m/item/independent-panel-on-evidence-for-action-against-antimicrobial-resistance-\(ipea\)-founding-document-draft-0](https://www.qjsamr.org/publications/m/item/independent-panel-on-evidence-for-action-against-antimicrobial-resistance-(ipea)-founding-document-draft-0).

14 Arne Ruckert and others, "Science policy interfaces in global environmental governance", Global Strategy Lab, 2025. Available at <https://www.globalstrategylab.org/publications/science-policy-interfaces-in-global-environmental-governance-policy-lessons-and-trade-offs-for-building-the-independent-panel-on-evidence-for-actions-against-amr/>.

15 Health Diplomacy Alliance, "From evidence to policy: establishment of the independent panel on evidence for Action against AMR", 2025. Available at <https://hdalliance.org/from-evidence-to-policy-the-establishment-of-the-independent-panel-on-evidence-for-action-against-amr/>.

This means the IPEA will need to generate a convincing investment case to build on their initial seed funding. For philanthropic and private funders, direct engagement through the Multi-Stakeholder Partnership Platform is one opportunity to create a forum for shared priority setting, accountability for results and to make a case for a return on investment. For governments, AMR cannot be seen to be a technical biomedical issue, but rather as a fundamental infrastructure that underlies pandemic preparedness, universal health coverage and the sustainable development goals, among other priority government agendas.¹⁶

Third, the IPEA will need to balance scientific independence with meaningful engagement with national governments to ensure policy relevance. Early proposals have shifted between a fully intergovernmental model led by Member States and a more independent model with a 30-member Expert Committee, supported by ad hoc expert groups and a secretariat.¹⁷

No matter which model ultimately emerges, the IPEA will need to clarify how scientists and observers will be nominated and selected and whether experts can initiate reports and establish standing workstreams to produce credible science.¹⁸ At the same time, the AMR scientific community will need to ensure the outputs of the SPI balance policy relevance without being policy prescriptive, recognizing diverse country needs, resources and priorities.

Finally, the equitable design of IPEA will ultimately determine whether it is embraced as a globally relevant interface, or whether it is dismissed as a pet project of the Global North. With greater acknowledgement of AMR as an issue of global justice, the IPEA can garner global attention on the profound implications for access to lifesaving medicines for marginalized populations, severe economic risks for small-scale farmers, and significant environmental dimensions to promote a just transition for AMR that includes the populations that are most impacted.¹⁹

16 Clare I.R. Chandler, "Current accounts of antimicrobial resistance: stabilisation, individualisation and antibiotics as infrastructure", *Palgrave Communications*, vol. 5, No. 53 (May 2019). Available at <https://www.nature.com/articles/s41599-019-0263-4#citeas>.

17 Arne Ruckert and others, "Intergovernmental or fully independent? Designing a scientific panel on evidence for action against antimicrobial resistance", *PLOS Glob Public Health*, vol. 5, No. 1 (2025). Available at <https://journals.plos.org/globalpublichealth/article?id=10.1371/journal.pgph.0004039>.

18 Genevieve Boily-Larouche and others, "Design to delivery: structuring IPEA's scientific work to meet policy needs", Global Strategy Lab and ESCMID, 2025. Available at <https://www.globalstrategylab.org/resources/design-to-delivery-structuring-ipeas-scientific-work-to-meet-policy-needs/>.

19 Sheila Varadan and others, "Antimicrobial resistance: just transitions for shared futures", *Public Humanities*, vol. 1 (2025). Available at <https://www.cambridge.org/core/journals/public-humanities/article/antimicrobial-resistance-just-transitions-for-shared-futures/A9F4BC4BCE2EC1916C57D669BA02DCE5>.

The IPEA will also be more effective if an equity focus is built into its structures and processes. This could include dedicating resources to support participation by scholars from low-resource settings, capacity-strengthening for early career researchers, and incorporating social and behavioural sciences and Indigenous knowledge.²⁰ In the end, context-relevant policy recommendations for low-resource settings and across every geographic region must include highly effective prevention measures and equitable access to antimicrobials.

Conclusion

The imminent launch of the IPEA presents an opportunity to build on decades of learning from SPIs to demonstrate that modern multilateralism can contribute to addressing the biggest challenges facing the world in the twenty-first century. If the panel can bridge diverse disciplines to produce evidence through a One Health approach, develop innovative strategies to sustainably fund their work, balance Member States' policy priorities with scientific credibility, and build equity into the fabric of its work, then the IPEA can become a foundational piece of the global governance architecture needed to address AMR.

20 Mathieu J. Poirier and others, "Social science contributions to the global action plan on antimicrobial resistance", *Bulletin of the World Health Organization*, vol. 104, No. 1 (2026). Available at <https://www.cambridge.org/core/journals/public-humanities/article/antimicrobial-resistance-just-transitions-for-shared-futures/A9F4BC4BCE2EC1916C57D669BA02DCE5>.