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To Ban or Not to Ban: The UK's Hamlet Moment With Farm Antibiotics

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ABSTRACT

This article applies the Multiple Streams Framework (MSF) to examine post-Brexit antimicrobial resistance (AMR) governance in UK agriculture, focusing on the contested regulation of prophylactic antibiotic use in farm animals. The study reveals how Brexit created a structural policy window, yet political and ideological dynamics rendered it functionally ineffective. While the problem and policy streams were well developed—supported by strong scientific evidence and viable alternatives—the politics stream, shaped by narratives of sovereignty, deregulation, and trade competitiveness, consistently blocked reform. The paper introduces the concept of a "meta-policy window" and shows how evidence was strategically mobilized rather than uniformly accepted. This case demonstrates how ideological filtering and institutional ambiguity can constrain policy change, even in moments of apparent opportunity. It contributes to policy theory by refining MSF for complex, post-crisis environments and offers broader lessons on evidence use, regulatory drift, and the politics of inaction.

Related Articles:

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Angervil, G. 2021. "A Comprehensive Application of Kingdon's Multiple Streams Framework: An Analysis of the Obama Administration's No Child Left Behind Waiver Policy." *Politics and Policy* 49, no. 5: 980–1020. https://doi.org/10.1111/polp.12432.

Peterson, Holly L., Mark K. McBeth, and Michael D. Jones. 2020. "Policy Process Theory for Rural Studies: Navigating Context and Generalization in Rural Policy." *Politics and Policy* 48(4): 576–617. https://doi.org/10.1111/polp.12366.

摘要

本文运用多源流框架(MSF)考察英国脱欧后农业领域抗生素耐药性(AMR)治理，重点关注农场动物预防性抗生素使用的争议性监管。研究揭示了英国脱欧如何创造了一个结构性政策窗口，但政治和意识形态动态使其功能失效。尽管问题流和政策流发展良好—有强有力的科学证据和可行的替代方案支持—但受主权、放松管制和贸易竞争力等叙事影响的政治流持续阻碍改革。本文引入了"元政策窗口"的概念，并展示了证据是如何被策略性地调动，而非被一致接受的。本案例表明，即使在看似机遇的时刻，意识形态的过滤和制度的模糊性也会制约政策变革。它通过完善MSF，使其适应复杂的后危机环境，为政策理论作贡献，并就证据运用、监管偏差和不作为的政治提供了更广泛的经验教训。

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RESUMEN

Este artículo aplica el Marco de Múltiples Flujos (MSF) para examinar la gobernanza de la resistencia a los antimicrobianos (RAM) en la agricultura del Reino Unido tras el Brexit, centrándose en la controvertida regulación del uso de antibióticos profilácticos en animales de granja. El estudio revela cómo el Brexit creó una ventana política estructural, pero las dinámicas políticas e ideológicas la hicieron funcionalmente ineficaz. Si bien los flujos de problemas y políticas estaban bien desarrollados, respaldados por sólida evidencia científica y alternativas viables, el flujo político, moldeado por narrativas de soberanía, desregulación y competitividad comercial, bloqueó sistemáticamente la reforma. El artículo introduce el concepto de "ventana metapolítica" y muestra cómo la evidencia se movilizó estratégicamente en lugar de ser aceptada uniformemente. Este caso demuestra cómo el filtro ideológico y la ambigüedad institucional pueden limitar el cambio de políticas, incluso en momentos de aparente oportunidad. Contribuye a la teoría de políticas al refinar el MSF para entornos complejos posteriores a crisis y ofrece lecciones más amplias sobre el uso de la evidencia, la deriva regulatoria y la política de la inacción.

1 | Introduction

The departure of the United Kingdom (UK) from the European Union (EU), commonly known as Brexit, has presented the UK with a unique opportunity to reformulate and redesign its regulatory frameworks across various sectors (Asiamah 2022, 2024a). Among the critical areas for regulatory consideration is the governance of antibiotic use in farming and the broader issue of antimicrobial resistance (AMR). This issue has profound implications for public health, animal welfare, and agricultural practices (O'Neill 2016; WHO 2019). The UK government has publicly committed to maintaining, if not enhancing, its regulatory standards in the wake of Brexit (DEFRA 2019). However, this commitment is now being scrutinized, particularly in the context of antibiotic usage in agriculture.

In 2019, the EU introduced Regulation (EU) 2019/6, a stringent policy aimed at banning the prophylactic (preventative) use of antibiotics in groups of animals through medicated feed. This regulation, which became effective in January 2022, was designed to combat the growing threat of AMR by significantly reducing the misuse of antibiotics in farm animals. The regulation's implementation coincided with the UK's post-Brexit transition, raising questions about whether the UK would adopt similar measures.

Advocacy groups, such as the Alliance to Save Our Antibiotics (ASOA), have been vocal in urging the UK to align its policies with the EU ban (ASOA 2020). These groups argue that stringent regulatory measures are essential to prevent the misuse of antibiotics and to curb the rise of AMR, which poses a significant threat to both human and animal health. Conversely, opposition from groups like the Responsible Use of Medicines in Agriculture (RUMA) emphasizes a more flexible regulatory approach. RUMA advocates for voluntary measures and industry-led initiatives, arguing that these can be equally effective without imposing rigid regulatory constraints. In 2018, George Eustice, the then Secretary of State for Environment, Food and Rural Affairs, assured that the UK government would implement a ban on the prophylactic use of antibiotics in farm animals post-Brexit (UK Parliament 2018). This commitment suggested a strong alignment with EU standards. However, in the latter years of the Conservative Party, the government appeared to have shifted its stance by not adopting the ban. The narrative shifted to emphasize the success of voluntary measures and industry-led efforts in reducing antibiotic use, which questioned the necessity of a legislative ban.

This research uses the Multiple Streams Framework (MSF) to examine the policy drift surrounding the UK's decision on the ban of prophylactic antibiotic use in farm animals. The MSF, with its focus on problems, policies, and politics streams, provides a robust theoretical lens through which to analyze how Brexit influences the agenda setting and policy formulation processes related to AMR governance (Cairney and Jones 2016; Kingdon 1995). It posits that policy change occurs when three independent streams—the problem stream, the policy stream, and the politics stream—converge during an open policy window.

The problem stream encompasses the recognition and framing of issues as policy priorities. In the context of AMR governance, this stream includes scientific evidence linking prophylactic antibiotic use to the growing threat of antimicrobial resistance, as well as public health concerns amplified by advocacy groups and international bodies. The policy stream involves the generation and evaluation of policy solutions, such as legislative bans, voluntary industry-led measures, or hybrid approaches. This study explores how stakeholders present these options and how feasible and acceptable they are within the current regulatory environment. Finally, the politics stream captures the broader political context, including the influence of Brexit-induced regulatory autonomy, shifting governmental priorities, and public opinion on agricultural practices and public health.

By applying the MSF, this research analyzes how Brexit caused changes within the streams, potentially creating new windows of opportunity. The study investigates how the post-Brexit environment influenced problem recognition, the development of policy alternatives, and the political receptiveness to addressing AMR. It also examines the role of policy entrepreneurs—individuals or groups who advocate for coupling the streams—in navigating the complexities of this policy domain. In doing so, the study highlights how the MSF framework helps elucidate the underlying reasons for non-decision outcomes and identifies potential strategies for overcoming it in the realm of AMR governance.

The justification for this study is threefold. Firstly, AMR is recognized as one of the top ten global public health threats by the World Health Organization (WHO 2019), necessitating urgent and sustained policy attention. Secondly, the post-Brexit

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policy landscape presents both challenges and opportunities for the UK to innovate and potentially lead in the global fight against AMR, making it a timely subject for investigation. Lastly, this research contributes to governance and public policy literature by introducing the concept of Brexit as a meta-policy window—a structural rupture that simultaneously creates and closes multiple policy windows. Unlike conventional policy windows, which open due to crises or electoral cycles, Brexit functions both as a moment of radical policy opportunity and as a constraint, given the UK's commitments to trade and regulatory autonomy.

2 | Conceptual Framework: The Multiple Streams Framework (MSF) and Brexit as a Meta-Policy Window

This study employs the Multiple Streams Framework (MSF) to investigate the evolution of UK antimicrobial resistance (AMR) policy in agriculture, particularly in the post-Brexit period. Developed by Kingdon (1995), the MSF explains how policies emerge from the coupling of three independent streams—problem, policy, and politics—when a "policy window" opens. The problem stream reflects how issues are recognized and prioritized; the policy stream concerns the development and selection of solutions; and the politics stream reflects political conditions, including public mood, interest group mobilization, and administrative turnover. Policy change occurs when these three streams converge, often facilitated by policy entrepreneurs who strategically couple them during windows of opportunity.

The MSF has been applied to a wide range of policy contexts, from health and education to climate and migration (Amri and Logan 2021; Cooper-Searle et al. 2018; Young et al. 2010) and is known for its analytical flexibility. However, it has also attracted criticism. First, the framework tends to treat the policy process as predominantly endogenous, downplaying how external shocks—such as Brexit—reshape stream alignment (Zahariadis 2019). Second, the MSF often underemphasizes the role of scientific evidence and framing in the problem stream, which limits its capacity to explain why some issues attract policy attention while others do not (Cairney and Jones 2016). Third, the politics stream is frequently described too generically, with limited attention paid to how partisan ideology, political rhetoric, and policy narratives shape policy decisions (Cairney and Jones 2016; Oliver et al. 2014). Finally, while MSF is traditionally deployed within domestic contexts, it does not easily account for the multi-level nature of governance in increasingly globalized and interdependent policy arenas.

This study addresses these gaps through four contributions. First, it applies MSF to a highly complex, multi-level policy environment marked by regulatory divergence between the UK and EU. In so doing, it demonstrates how MSF can be adapted to analyze policymaking at the intersection of domestic autonomy and international obligations. Second, it conceptualizes Brexit as a "meta-policy window": a structural rupture that simultaneously opens and closes multiple windows across sectors. Unlike typical policy windows triggered by crises or elections, Brexit disrupted institutional arrangements wholesale, altering how policy streams interact and which solutions are considered politically feasible.

Third, the study integrates insights from framing theory and evidence politics to explore how scientific evidence is selectively interpreted, amplified, or marginalized by actors within each stream. This is particularly important in AMR governance, where the scientific consensus supports tighter regulation, but policy outcomes often reflect competing ideological and economic priorities. Lastly, the paper emphasizes the role of policy entrepreneurs—especially advocacy coalitions and industry groups—in strategically navigating these post-Brexit dynamics to either advance or resist regulatory change.

From this perspective, the research is guided by two interrelated questions:

1. How has Brexit influenced the alignment of the problem, policy, and politics streams in UK AMR governance related to farm antibiotics?
2. How do ideology, regulatory autonomy, and stakeholder framing shape the use of evidence in decision-making around prophylactic antibiotic use?

These questions are explored through a detailed mapping of how different actors—government agencies, industry coalitions, advocacy groups, and public health experts—have responded to the UK's post-Brexit opportunity to either align with the EU's 2019/6 regulation or chart a divergent path. The MSF offers a useful lens to make sense of the apparent policy inertia, despite strong evidence of the risks posed by continued prophylactic use of antibiotics in livestock. By adapting the framework to a multi-level, post-Brexit context, this study contributes to ongoing efforts to refine MSF for complex, transboundary governance challenges.

3 | Methodological Approach

This study employed a qualitative, interpretive research design to assess the governance of antimicrobial resistance (AMR) in UK agriculture after Brexit. The aim is to understand how Brexit restructured policy dynamics and how different actors engaged with the problem, policy, and politics streams in the context of the Multiple Streams Framework (MSF). The methodology was deliberately designed to trace how issues were framed, which solutions were advanced or resisted, and how political ideologies shaped the uptake of evidence in policymaking.

The empirical analysis drew on two complementary sources: documentary analysis of 30 key documents and 13 semi-structured interviews with expert stakeholders.

Documents were selected purposively to capture key institutional positions and public debates between 2016 and 2023. They include UK parliamentary debates (Hansard), government statements from DEFRA and the Veterinary Medicines Directorate (VMD), the Swann Report (1969), the O'Neill

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Review (2016), EU Regulation 2019/6, and advocacy and industry publications from the Alliance to Save Our Antibiotics (ASOA) and the Responsible Use of Medicines in Agriculture Alliance (RUMA). Each document was included based on its relevance to post-Brexit AMR regulation and the insight it offered into stakeholder strategies and stream dynamics.

Interviews were conducted with 13 purposively selected participants: five from industry (across livestock sectors), five from advocacy organizations (focusing on public health, environmental, and consumer advocacy), and three academic experts in AMR, public health, and agricultural policy. Interviewees were asked about their perceptions of AMR risks, evidence credibility, post-Brexit policy opportunities, and the role of political values and institutional constraints in shaping regulatory responses. Interviews were anonymized and typically lasted 45–60 min. This combination of interviews and documents enables triangulation of narratives and perspectives across different actor groups, helping to trace the construction and contestation of each MSF stream.

The data were analyzed thematically using NVivo software, guided by a hybrid coding strategy. First, deductive codes based on the MSF streams were applied (e.g., "problem framing," "policy alternatives," "political mood," "ideological cues," "use of evidence," "policy entrepreneurs"). Second, inductive coding captured emergent themes, such as economic pressures on farmers, trade-related arguments, and rhetorical appeals to sovereignty. Rather than seeking causal generalization, the analysis aimed to map how different actors interpreted and engaged with each stream. In the problem stream, the study traced how actors framed AMR as urgent (or not), what evidence was cited, and which indicators were seen as credible. In the policy stream, it examined how stakeholders evaluated various options (voluntary vs. legislative) and the trade-offs they emphasized. In the politics stream, it analyzed how Brexit-related political ideologies, party positions, and lobbying influenced the receptivity to different solutions.

This mapping allowed for the identification of alignment (or misalignment) across streams and helped assess whether Brexit constituted a policy window in practice.

To strengthen interpretive validity, data were triangulated across actor types and document types—not to "prove reliability" in a statistical sense, but to test the consistency of framing, evidence use, and stream alignment. For instance, claims in ASOA reports about AMR risks were compared with parliamentary statements and VMD data to examine convergence or contradiction. Similarly, RUMA's policy narratives were assessed against both interview accounts and Hansard records to understand their political influence.

To enhance transparency, the appendix includes a full list of analyzed documents (Appendix 1), anonymized descriptions of interview participants (Appendix 2), and a summary table of the themes and codes used in the analysis (Appendix 3). This transparent documentation supports the traceability of interpretations and helps the reader assess how conclusions were derived.

4 | Historical Account of UK's Farm Antibiotics and AMR Governance

The use of antibiotics in UK agriculture began in the 1940s, coinciding with the advent of commercial antibiotics (Bud 2007; Woods 2014; Cozzoli 2014). Initially, antibiotics were used exclusively to treat individual animal infections, such as mastitis in cows, mirroring practices in human medicine. However, the post-war era witnessed a shift toward intensified agriculture to meet food security demands, resulting in the widespread use of antibiotics as growth promoters (AGPs) in animal feed (Kirchhelle 2018).

As antibiotic use expanded, concerns emerged over the unintended consequences of indiscriminate use, highlighted by reports of antibiotic-resistant bacterial strains in agricultural environments (Smith 1958). Recognizing the risks, the UK government commissioned the Swann Commission in 1969. The Commission's report explicitly linked excessive antibiotic use in livestock to the development of resistant enteric bacteria transferable to humans. Following the report, the UK introduced pioneering measures to restrict the use of penicillin and tetracyclines as AGPs, acknowledging the intertwined health of humans and animals. Despite these regulatory steps, mass medication and unauthorized antibiotic sales persisted, reflecting the difficulties of enforcement in a sector driven by economic and practical considerations.

The UK's accession to the European Economic Community (EEC) in 1973 introduced additional regulatory complexity and opportunities. Membership required adherence to EU directives, which shaped the UK's antimicrobial resistance (AMR) policies within a broader, harmonized framework. The EU's proactive stance on AMR, evidenced by comprehensive action plans and regulatory measures, advanced coordinated governance (Pierre et al. 2024). Key developments included the EU-wide ban on AGPs (European Commission 2006) and the establishment of surveillance networks such as the European Antimicrobial Resistance Surveillance Network (EARS-Net), significantly influencing UK policy (Asiamah 2022).

The politics of farm antibiotic regulation in the UK became intertwined with the EU's network-based governance model, fostering collaboration across member states. This harmonization influenced UK institutions, including government agencies, civil society organizations (CSOs), environmental NGOs, and industry stakeholders. These actors engaged with both national and EU-level institutions, navigating a complex regulatory landscape (Pierre et al. 2024). UK civil society groups, such as the Alliance to Save Our Antibiotics (ASOA), effectively utilized EU mechanisms to hold UK authorities accountable. For instance, ASOA's reporting of the UK to the European Medicines Agency (EMA) for non-compliance with an EU directive on antibiotic advertising resulted in a domestic ban on such practices (Asiamah 2022), exemplifying the influence of EU directives on UK governance.

In 2019, the EU adopted Regulation (EU) 2019/6, banning the prophylactic (preventive) use of antibiotics in groups of animals through medicated feed and as a control treatment. This

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regulation, effective from 2022, came after the UK's exit from the EU. Rooted in robust scientific evidence linking agricultural antibiotic use to AMR, the regulation marked a shift from recommendations to stringent measures. Reflecting a "One Health" approach, it emphasized that antibiotics should be used "as little as possible and as much as necessary," aiming to eliminate their routine preventive use in groups of animals.

5 | Farm Antibiotics and AMR Governance Post-Brexit

Brexit provided the UK with an opportunity to reassess and potentially redesign its approach to AMR. This newfound regulatory autonomy enabled the UK to potentially implement stricter controls on antibiotic use in agriculture than those previously mandated by the EU. For instance, the UK could adopt the EU's ban on prophylaxis or adopt other voluntary measures. Brexit also provided a unique window of opportunity for policy entrepreneurs to reframe and prioritize AMR within the UK's public health and agricultural policy agenda. This section examines how the ban on the preventive mass medication of livestock became a topic of concern in the context of Brexit, the policy alternatives and evidence provided by different stakeholder groups, and the political dynamics surrounding the issue.

6 | The Problem Stream: Framing AMR in a Politically Ambiguous Environment

In the MSF, the problem stream concerns how conditions come to be seen as problems requiring government action. In the case of AMR, the empirical evidence is well established: antibiotic overuse in livestock contributes to resistant bacterial strains, posing a serious threat to human and animal health. Yet, as Kingdon (1995) and Cairney and Jones (2016) highlight, evidence alone does not ensure a policy response. Problems must be framed in ways that resonate with policymakers, and indicators must compete for visibility within crowded policy agendas.

Quantitative data from the Veterinary Medicines Directorate (VMD) and the Animal and Plant Health Agency (APHA) document shows significant use of antibiotics in UK agriculture, especially in pigs and poultry, where prophylactic and metaphylactic practices persist. In 2019, veterinary antibiotic sales exceeded 32 t, with tetracyclines and penicillins being most used (VMD 2020). Surveillance reports from Public Health England (PHE) and APHA have also detected resistance to critical antibiotics such as fluoroquinolones and extended-spectrum cephalosporins (APHA 2019; PHE 2019). These indicators provide strong justification for regulatory action.

However, the evidence base has not led to uniform interpretations. Stakeholders diverge in their reading of both the severity and urgency of AMR. Advocacy groups such as the Alliance to Save Our Antibiotics (ASOA) emphasize alarming trends, highlighting rising levels of resistant *E. coli* in poultry meat and urging immediate legislative bans (ASOA 2020). Their framing draws directly on the "One Health" model, integrating human, animal, and environmental health risks, and often refers to WHO and EU recommendations as normative benchmarks.

In contrast, industry actors—especially those aligned with the Responsible Use of Medicines in Agriculture (RUMA)—acknowledge AMR risks but argue that voluntary stewardship efforts have already led to substantial reductions in use, reducing the urgency for further regulation. RUMA documents often emphasize relative progress, comparing UK reductions favorably to other countries and citing economic pressures as mitigating factors against further restrictions.

This divergence in framing is further complicated by the structure of the UK farming sector. Intensive farming systems—particularly for pigs and poultry—depend on preventive antibiotic use to mitigate the risk of disease in high-density conditions. Several interviewees from the farming and veterinary sectors argued that antibiotics are used "not to boost growth, but to maintain health under economically necessary conditions." They emphasized that without these measures, animal welfare and economic viability could suffer. As the Chief Executive of the National Beef Association, Chris Mallon, argues:

> It is not necessarily going to be what a consumer wants, but it would give us efficiency so we can compete...We are told to control our use of antibiotics...We are doing things that other people are not doing, and we are already at that standard. This is about maintaining standards. If you want us to compete economically with those countries, you are going to have to say that you will reduce those standards.

By contrast, the advocacy leaders and academic experts interviewed noted that the framing of AMR as a public health emergency had not yet penetrated core agricultural policy narratives. One advocacy respondent commented:

> The science is not the issue here. Everyone knows overuse drives resistance. The issue is what kind of action is seen as politically palatable.

Thus, while the empirical evidence supports treating AMR as a pressing policy problem, its framing is filtered through political and economic narratives. Conservative politicians often invoke terms like "pragmatism," "industry flexibility," and "trusted professionals" when resisting stricter regulation. These framings suggest that the AMR problem is not denied—but rather, de-prioritized in light of other policy objectives.

Brexit introduced further complexity into the problem stream. On one hand, it created a perceived need for the UK to demonstrate "world-leading" standards, which advocacy groups used to push for alignment with the EU's Regulation 2019/6. On the other hand, the political emphasis on "sovereignty" and "cutting red tape" enabled counter-framings that positioned further regulation as economically burdensome and inconsistent with

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post-Brexit autonomy. This duality created a fragmented recognition of the AMR problem. While the technical indicators and public health evidence remained clear, the political framing of those indicators became unstable. Interviewees from both DEFRA and Parliament noted that ministers were "cautious" about triggering further regulatory debates, especially in light of ongoing trade negotiations and concerns over competitiveness with countries like the US and Australia.

The complex nature of the agricultural supply chain contributes to the persistence of farm antibiotics and AMR in the UK. Antibiotics may be administered at various stages of production, from breeding and rearing to transportation and processing, making it challenging to track and regulate their usage effectively (Wall et al. 2016). Furthermore, the globalized nature of the food industry means that antibiotic-resistant bacteria and genes can easily spread across borders through trade in livestock and animal products (WHO 2017).

Growing public awareness of the link between farm antibiotics, AMR, and human health has intensified concerns among consumers and advocacy groups in the UK. High-profile incidents of AMR-related infections, food recalls, and antibiotic residues in food products have heightened scrutiny of antibiotic use in agriculture (BBC 2022). However, translating public concern into tangible policy action and behavioral change remains a challenge, requiring coordinated efforts from policymakers, industry stakeholders, and the public (UK Department of Health and Social Care 2019).

The problem stream in this case is both strong and fragmented. AMR is widely recognized as a global threat, and data on UK farm antibiotic use supports urgent action. However, competing framings—some emphasizing urgency, others framing action as premature or harmful—have inhibited clear problem definition in the policy arena. Brexit has amplified this fragmentation by introducing competing imperatives: aligning with global public health leadership versus asserting regulatory autonomy.

7 | The Politics Stream: Sovereignty, Deregulation, and the Political Contestation of AMR Policy

In the MSF, the politics stream encompasses national mood, political ideologies, interest group pressure, and shifts in government leadership (Kingdon 1995). It shapes the political receptiveness to policy change and determines which issues rise—or stall—on the decision agenda. In the case of UK AMR governance, the politics stream was significantly influenced by Brexit, which redefined political priorities and introduced new ideological framings that reshaped the terrain of regulation.

Brexit was more than a legal departure from the EU; it was a recalibration of British political discourse. The dominant ideological current post-2016 emphasized regulatory autonomy, national sovereignty, and resistance to perceived EU overreach (Asiamah 2024a). This political ethos had direct implications for AMR governance. Even where cross-party support existed in principle for tackling antibiotic overuse, the appetite for legally binding regulation waned under successive Conservative governments.

From 2016 onward, parliamentary debates reveal a growing tension between public health advocates and politicians wary of "blanket bans." While some MPs supported measures aligned with EU Regulation 2019/6, others argued that such bans undermined veterinary discretion and imposed undue burdens on British farmers. Notably, Michael Gove and Mark Spencer—key figures in Conservative agricultural policymaking—explicitly framed regulation as incompatible with the "realities" of UK livestock management and national competitiveness. Mark Spencer's statement in January 2023 exemplifies this position:

> "I do not like blanket, overarching rules... To have a block rule where we rule out the use of a medicine to a group of animals that are suffering from an infection would be silly."
>
> (UK Parliament 2023)

Michael Gove, the-then Secretary of State for DEFRA, also held the same position:

> ...such a restriction on the veterinary surgeon's ability to prescribe antibiotics prophylactically for administration to groups of animals...could have a detrimental effect on the health and welfare of such livestock and exacerbate potential spread of disease.
>
> (The Guardian 2018).

This rhetoric positioned regulation as irrational and disconnected from farm-level realities, appealing to both rural constituencies and broader post-Brexit narratives about reclaiming common-sense policymaking from Brussels.

Conservative reluctance to legislate on prophylactic antibiotic use also reflected long-standing relationships with agricultural interest groups. Organizations like RUMA played a central role in shaping the politics stream by framing voluntary measures as successful, science-based, and more "British" than rigid regulation. Industry actors had regular access to policymakers and used this access to argue that overregulation would stifle innovation and harm animal welfare.

On the other side of the political aisle, Labour MPs were more likely to align with advocacy groups like ASOA, framing AMR as a public health emergency that required statutory action. The 2016 Early Day Motion signed by 62 MPs—mostly from Labour, SNP, and the Greens—called for stronger controls on prophylactic use (UK Parliament 2016). This partisan divergence widened over time, with Labour members expressing frustration that the government's inaction undermined UK commitments to global health standards. Notably, Virendra Sharma's intervention in 2023 sought to re-centre the AMR debate on international norms and long-term public health risks (UK Parliament 2023). However, in the absence of political consensus—and given the Conservative majority at the time—the call for stricter controls did not gain legislative traction.

The politics stream thus reveals a central paradox: widespread recognition of AMR's threat coexisted with political resistance

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to meaningful regulatory reform. This resistance was not due to ignorance or denial of evidence, but rather the product of ideological reframing. Regulation came to be seen not as protective, but as punitive—especially in a post-Brexit context where demonstrating national independence from EU norms became a political currency. Brexit also introduced new trade pressures. Interviewees from DEFRA and industry noted that concern over upcoming trade agreements—with countries like the US and Australia—made the government hesitant to impose stricter standards that could disadvantage UK exporters or complicate market access negotiations.

In this environment, even supportive policymakers exercised caution. As one interviewee put it:

> Nobody wants to be seen as weakening public health, but neither do they want to provoke the farming lobby or lose a trade deal. So, things get stuck.

This "stuckness" is precisely what the MSF helps reveal: political receptivity to policy proposals is not just about support or opposition, but about whether the broader political mood and institutional context create a window for reform.

Overall, the politics stream in post-Brexit AMR governance is defined by ideological ambivalence. While the Conservative government committed rhetorically to high standards (UK Parliament 2018), its actions reflected a deep hesitation to legislate. Brexit's emphasis on sovereignty, deregulatory ideology within the Conservative Party, and concern over trade competitiveness together created a politics stream unfavorable to regulatory alignment with the EU. This closed what might otherwise have been a promising policy window for AMR reform, despite strong problem recognition and feasible policy alternatives.

8 | The Policy Stream: Competing Ideas, Strategic Framing, and Brexit-Era Policy Drift

In the Multiple Streams Framework, the policy stream represents the domain in which ideas are generated, refined, and debated. It is where technical experts, advocacy groups, and stakeholders put forward policy alternatives, assess their feasibility, and promote their acceptability. Kingdon (1995) describes this stream as a "policy primeval soup" where ideas must survive by meeting criteria such as technical feasibility, value congruence, and resource acceptability. In the UK's post-Brexit governance of antimicrobial resistance (AMR), the policy stream has been shaped by two dominant and competing advocacy coalitions: those calling for statutory bans on prophylactic antibiotic use and those promoting voluntary, industry-led stewardship. The central policy options under debate fall along a spectrum:

1. Full statutory ban on the prophylactic group treatment of farm animals with antibiotics (mirroring EU Regulation 2019/6),
2. A hybrid regulatory model, with legally binding limits combined with industry guidelines,
3. Continuation of voluntary measures, guided by codes of best practice and sector targets.

Advocacy groups such as the Alliance to Save Our Antibiotics (ASOA) have consistently promoted Option 1. They argue that only enforceable restrictions can drive sustained reductions in use and align the UK with international standards. ASOA draws on WHO recommendations and the EU model to advocate for precautionary principles. Their framing emphasizes the public health stakes and the inadequacy of voluntary approaches to tackle systemic overuse. Cóilín Nunan, ASOA's scientific advisor, states:

> The government cannot claim to be a world leader when the UK is one of the only countries in western Europe where it will be legal to use antibiotics routinely for preventive mass medication of farm animals... The UK will then probably end up with some of the weakest regulatory standards in Europe.
>
> (The Guardian 2022)

ASOA acknowledges that UK farmers have voluntarily reduced their antibiotic use by around 50%. However, they argue that these cuts were largely motivated by impending EU regulations and that antibiotic usage in animals like pigs remains higher in the UK compared to countries such as Denmark and the Netherlands. ASOA believes that new laws ending preventive antibiotic group treatments will result in further reductions. In an interview with one of the leading members for this study, he stated that:

> In fairness, there has been a significant cut in farm antibiotic use over the last 4–5 years. But it began when the EU was agreeing on this new rule to ban preventive mass medication... And also, the reduction in the pig industry, although they have made large cuts, they could still make much larger cuts going forward, and that is less likely if these regulations are not implemented.

By contrast, the Responsible Use of Medicines in Agriculture Alliance (RUMA) and affiliated industry groups have rallied around Option 3, arguing that voluntary stewardship is already delivering results. Their public statements and interviews stress the adaptability of the sector, the importance of preserving veterinary discretion, and the risks of rigid regulation. They argue that blanket regulations could hinder veterinary interventions and compromise animal health and welfare. Instead, RUMA emphasizes the effectiveness of industry-led initiatives in fostering sustainable antibiotic practices. Catherine McLaughlin, RUMA Chair and NFU chief scientific adviser for animal health and welfare, explains:

> [There would] always be some instances and conditions that unavoidably require the treatment of groups of animals to help protect their health and welfare... RUMA believes it is important for vets to have medicines available to tackle disease and ensure animal health and welfare, following the principles of

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> responsible use: as little as possible, but as much as is necessary, at the right time and in the right situations.
>
> (The Guardian 2018)

Some RUMA members contend that arbitrary control of antibiotics can harm animal health and welfare. Former BVA President Sean Wensley argues:

> The use of antibiotics in agriculture is just one piece of the jigsaw when tackling AMR and we need to see increased collaboration... BVA is opposed to the introduction of arbitrary, non-evidence-based target setting; such targets, to reduce antibiotic use, risk restricting vets' ability to treat disease outbreaks in livestock, which could have serious public health and animal welfare implications.
>
> (NFU 2016)

Additionally, some coalition members argue that the existing voluntary approach has already placed the UK ahead of most EU countries. Richard Griffiths, Chief Executive of the British Poultry Council (BPC), posits:

> We [the UK] are recognized as a leading proponent of responsible use of antibiotics, so no I do not think there is a danger of us falling behind anyone... A large part of our success is based on trusting veterinary colleagues to make expert judgments on a case-by-case basis and then pooling what has been learned. Compulsory controls are unnecessary at this point and would be too blunt an instrument for what is an incredibly complex subject.
>
> (BPC 2020).

RUMA's advocacy strategy focuses on showcasing industry progress and fostering a culture of stewardship among farmers and veterinarians. By publishing guidelines and reports on best practices, RUMA demonstrates the industry's commitment to change and positions itself as a leader in responsible antibiotic use. They engage in seminars, workshops, and guidance materials to shape industry behavior and align with broader AMR reduction goals.

This contrast in positions reflects more than technical disagreement—it signals different epistemological assumptions about how change happens: through regulatory coercion or professional culture shift. Stakeholder assessments of policy options were grounded in both evidence and political economy. ASOA's policy proposals drew strength from comparative evidence (e.g., Denmark and the Netherlands) and epidemiological studies linking prophylactic use to AMR outbreaks. They also framed a ban as a moral imperative: to protect future generations and preserve the efficacy of antibiotics.

However, interviewees acknowledged that implementation would require transitional support for farmers, improved animal husbandry systems, and investment in veterinary training—making feasibility contingent on broader agricultural policy reforms. RUMA and other industry-aligned stakeholders challenged both the technical feasibility and political acceptability of a ban. They pointed to the diversity of UK farm types, concerns about animal welfare if treatment delays occur, and trade competitiveness in a global market where many countries lack similar regulations.

These actors also strategically highlighted the success of the UK's voluntary approach, noting that overall antibiotic use in livestock had halved between 2014 and 2020. For them, the existing system exemplified "responsible regulation" without top-down mandates. While these claims are not uncontested—ASOA and some researchers attribute reductions to EU pressures and impending regulation—the framing has been influential in sustaining support for voluntary measures among Conservative policymakers.

One significant omission in the policy stream is the lack of a coordinated policy proposal from the government itself. DEFRA and the Veterinary Medicines Directorate (VMD) have not produced an updated AMR strategy specific to farm antibiotics post-Brexit. Instead, their public communications reaffirm broad commitments to responsible use while deferring to industry practices. This absence leaves the field open for non-state actors to dominate the policy discourse. Also underrepresented are voices from consumer groups and food retailers—despite their potential leverage in shaping demand for higher welfare and lower-antibiotic products. A more proactive engagement from the retail sector, for example through supply chain standards, could shift the center of gravity within the policy stream.

Overall, the policy stream in UK AMR governance is populated by well-developed alternatives, but their political and institutional traction varies. The statutory ban is technically feasible and normatively compelling but faces challenges of implementation cost and political resistance. Voluntary measures, by contrast, are institutionally entrenched and rhetorically aligned with post-Brexit governance, making them more politically palatable despite their limitations. In MSF terms, the policy stream is diverse but divided. Policy ideas are present, refined, and championed—but they have not achieved the broad consensus or elite backing required to couple with the politics stream and drive change. The absence of strong governmental leadership further diffuses the stream, making it more susceptible to inertia and fragmentation.

9 | Analysis and Discussions

This section synthesizes the findings by exploring how the problem, policy, and politics streams in the UK's post-Brexit AMR governance intersected—or failed to converge. Using the MSF, it identifies the mechanisms by which promising policy solutions stalled, despite high-quality evidence and stakeholder engagement. Three key analytical insights emerge: (1) misalignment between streams due to ideological filtering; (2) political drift and strategic framing; and (3) a weak policy window undermined by regulatory ambiguity.

9.1 | Misalignment of Streams: Politics as the Gatekeeper

The MSF suggests that for meaningful policy change to occur, three conditions must be simultaneously satisfied: a

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well-recognized problem, the availability of technically and politically feasible solutions, and a favorable political environment. This alignment creates what Kingdon (1995) termed a "policy window," allowing policy entrepreneurs to push their proposals onto the decision agenda. In the UK's AMR case, however, while the problem and policy streams were well-developed, the politics stream acted as a consistent gatekeeper—blocking convergence and stalling reform.

The problem stream was underpinned by extensive scientific data, surveillance systems, and global consensus. Reports from the Veterinary Medicines Directorate (VMD), the World Health Organization (WHO), and the O'Neill Review presented AMR as a critical health threat, with urgent calls to regulate agricultural antibiotic use. Advocacy groups like the Alliance to Save Our Antibiotics (ASOA) further amplified these concerns, using emotionally resonant narratives and cross-sectoral evidence to construct AMR as both a public health emergency and a moral imperative.

Simultaneously, the policy stream offered a range of clearly articulated solutions. These ranged from legally binding bans on prophylactic antibiotic use (as implemented by the EU), to hybrid models combining voluntary targets with statutory oversight, to the continuation of the existing stewardship regime led by industry actors. These alternatives were discussed in policy forums, reflected in parliamentary debates, and debated in media commentary. Stakeholders engaged in framing contests to establish the legitimacy and feasibility of their preferred options. Thus, both the problem and policy streams were primed for convergence.

Yet the politics stream proved to be the decisive bottleneck. The period following Brexit saw a profound reordering of political values and governing logics in the UK. Sovereignty, regulatory independence, and competitiveness emerged as overriding concerns—particularly within the Conservative Party. These themes reframed the terrain of policymaking. Regulation, even if grounded in scientific consensus, was increasingly viewed with suspicion if perceived to originate from, or align with, EU norms.

Public health officials and advocacy groups continued to emphasize the risks of inaction and the global consequences of AMR. However, politicians—particularly those with rural constituencies and strong ties to the farming lobby—were more responsive to narratives warning of overregulation, economic burden, and bureaucratic overreach. Parliamentary speeches and ministerial statements between 2019 and 2023 consistently invoked the need to "trust professionals," "cut red tape," and support the "flexibility" of British agriculture.

This political climate created what might be termed an ideological filtration mechanism—a process by which scientific evidence and policy proposals were not outright rejected, but selectively interpreted in light of broader political goals. Regulatory proposals aligned with EU standards were framed as threats to autonomy. Similarly, calls for statutory bans were portrayed as disproportionate or insensitive to the economic realities of farming. This reframing not only altered the discourse but also shifted institutional incentives, making it politically costly for government departments to pursue stricter controls.

The misalignment was also institutional. Key governmental actors such as DEFRA and the VMD lacked the political mandate or pressure to advance statutory reforms. Internal stakeholders often deferred to industry initiatives, which were perceived as less confrontational and more consistent with the voluntarist ethos promoted post-Brexit. Consequently, even as problem recognition increased and policy proposals matured, the political will to act remained fragmented or entirely absent. This environment fostered policy inertia—not because solutions were absent, but because the political conditions necessary for their advancement were actively undermined by ideological commitments and economic anxieties. In MSF terms, the streams did not align because the politics stream—shaped by partisan narratives, trade concerns, and identity politics—effectively shut the window.

Moreover, Brexit's paradoxical influence deepened this misalignment. While Brexit opened structural space for new regulatory models and divergence from the EU, it simultaneously narrowed the range of politically acceptable solutions. The framing of post-Brexit Britain as a nimble, deregulated economy constrained appetite for harmonization with EU standards, even when those standards aligned with domestic scientific advice. Thus, Brexit created the form of a policy window—but not the substance.

9.2 | Political Drift and the Ideological Reframing of Responsibility

A second dynamic that emerges from the analysis is what can be described as ideological drift—the slow, subtle, and strategic transformation of the policy conversation from one framed around precaution and public responsibility to one emphasizing pragmatism, professional discretion, and industry self-regulation. This drift did not manifest as a sharp break or public contestation over the facts of AMR. Rather, it unfolded as a gradual reframing of responsibility, shifting attention away from state-led intervention toward market-friendly and technocratic solutions.

In the early post-Brexit years, there was significant political and institutional appetite to be seen as addressing AMR. Government white papers, parliamentary debates, and international statements reaffirmed the UK's commitment to "world-leading" standards in public health and animal welfare. However, as political attention turned to issues such as trade deals, domestic economic resilience, and post-COVID recovery, the regulatory tone subtly shifted. Prophylactic antibiotic use was not denied as a problem—but it was increasingly contextualized as a challenge that could be managed through industry-led innovation rather than public law.

This narrative gained traction among policymakers because it mapped neatly onto broader post-Brexit governing ideologies. These ideologies valorized regulatory independence, flexibility, and trust in professionals—a move that suited actors like RUMA, who promoted a stewardship-based model that

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positioned veterinarians and farmers as responsible agents capable of self-monitoring. In interviews and official publications, RUMA repeatedly framed UK farmers as "world-leading" in reducing unnecessary antibiotic use, arguing that further regulation was unnecessary, potentially counterproductive, and even undermining the professionalism of the sector.

This discourse found fertile ground in the Conservative Party, where key ministers invoked ideas of "common sense," "proportionality," and "real-world complexity" to resist calls for hard-line legislation. Proposals for statutory bans were portrayed not only as bureaucratic but also as ideologically out of step with Britain's newly reclaimed policy autonomy. In short, what had once been framed as a shared global health challenge now became an arena for asserting post-Brexit sovereignty, with policymakers repositioning regulatory restraint as a mark of national confidence rather than institutional weakness.

This ideological repositioning also altered the evidentiary terrain. Scientific data on AMR was not dismissed, but it was no longer regarded as a decisive lever for action. Instead, it became a discursive resource—one that could be selectively cited, emphasized, or downplayed depending on the political context and strategic objectives of different actor groups. Advocacy coalitions such as ASOA cited resistance trends, public health risks, and international guidelines to argue for statutory bans. In contrast, industry stakeholders pointed to declining overall antibiotic usage in UK farming as proof that voluntary measures were sufficient, implying that regulation would be redundant or overly punitive.

Crucially, these divergent narratives often relied on the same datasets. For example, ASOA and RUMA both referenced reductions in antibiotic sales but interpreted them in radically different ways. For ASOA, the reductions demonstrated the impact of public scrutiny and implied the need for legal reinforcement to secure long-term progress. For RUMA, the same trend was evidence of responsible, autonomous industry leadership requiring no further government intervention. Thus, the epistemic authority of science remained intact, but its policy implications became politically malleable.

This dynamic exemplifies what policy scholars describe as strategic ambiguity: a condition in which core concepts like "progress," "safety," or "stewardship" are so broadly defined that they can be claimed by multiple actors in support of conflicting agendas. In such contexts, evidence does not lead to consensus but becomes a tool for policy entrepreneurship—deployed by actors seeking to reshape norms, reframe responsibilities, and maintain influence within an uncertain policy landscape. The result was a policy discourse that privileged managerial over legislative responses, where the appearance of action—via voluntary codes, sector targets, and public-private dialogues—substituted for enforceable rules. This shift helped diffuse political pressure without altering the institutional architecture of AMR governance. It also reinforced the status quo by absorbing dissent into procedural language, rather than opening genuine space for democratic contestation or reform.

9.3 | The Illusion of a Policy Window: Brexit's Ambiguous Opportunity

Theoretically, Brexit offered a textbook example of what the MSF refers to as a policy window—a moment of structural rupture in which previously settled assumptions are unsettled, institutional routines disrupted, and new agendas pushed forward. Kingdon (1995) and later scholars have emphasized that such windows, often opened by major political transitions, crises, or shifts in public mood, allow policy entrepreneurs to couple streams and advance change that would otherwise be blocked. Following the 2016 referendum, Brexit was widely perceived as such a moment by stakeholders across the policy spectrum. The disentanglement from EU regulatory structures created the prospect of reforming entrenched policy regimes, including the governance of AMR in agriculture.

Indeed, interviews conducted between 2019 and 2022 revealed an early sense of optimism—even among actors with divergent views. Advocacy groups like ASOA saw Brexit as an opportunity to legislate stricter controls than those imposed by the EU, casting the moment as a chance to "set the global gold standard" in AMR regulation. At the same time, some industry stakeholders welcomed the potential to shape new UK-specific rules that were more attuned to local realities. Both groups, albeit for different reasons, regarded the regulatory reset as a means of escaping the inertia of EU consensus politics and crafting a more tailored, agile system of farm antibiotic governance.

However, this sense of opportunity proved short-lived. While Brexit may have opened a structural window, the political dynamics that followed rapidly narrowed its functional scope. Rather than catalyzing ambitious reforms, Brexit created a double bind: the UK was under pressure to demonstrate regulatory independence from the EU, while simultaneously affirming its credibility as a global health leader committed to evidence-based standards. This contradiction generated a form of policy schizophrenia—where ministers could publicly endorse the need for robust AMR regulation while privately resisting binding measures that mirrored EU policy or risked alienating domestic constituencies.

The result was a pervasive policy ambiguity. Official government documents celebrated the UK's leadership on AMR, referencing its role in the 2016 O'Brien Review and commitments to the WHO Global Action Plan. Yet, behind the scenes, regulatory momentum stalled. Proposals to mirror EU Regulation 2019/6 were shelved or diluted. Consultations were launched but not acted upon. Ministers deployed language emphasizing "trust in professionals" and "pragmatic approaches" as rhetorical cover for inaction. This led to what scholars describe as a "non-decision" outcome—where policy stasis is maintained not through denial but through calculated deferral.

Importantly, the illusion of a policy window was sustained by discursive performances of reform. Policymakers continued to frame the UK as a responsible actor, pointing to voluntary codes, public-private partnerships, and declining antibiotic use as signs of progress. However, these initiatives lacked legal

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enforceability, public accountability, and long-term institutional commitment. As such, they functioned more as symbolic gestures than structural interventions. The AMR policy landscape remained substantively unchanged, even as political actors gestured toward change.

This case challenges the notion that policy windows are simply "open" or "closed" in a mechanistic fashion. Rather, it reveals that policy windows are ideologically mediated: their boundaries, direction, and usability are shaped by prevailing narratives, institutional logics, and political risk calculations. Brexit opened the window structurally—by altering the legal and institutional architecture of UK policy—but political actors swiftly reframed and re-scoped that window by constraining what counted as legitimate, desirable, or acceptable policy action. In this sense, the window never fully materialized in functional terms.

The misalignment of streams persisted not because of an absence of ideas or evidence, but because political receptivity was undermined by competing imperatives. The Conservative government's desire to avoid EU alignment, its deep ties to the agricultural lobby, and its broader deregulatory agenda created a politics stream that remained inhospitable to statutory reform. Even where problem recognition and policy alternatives were well established, the ideological commitments of post-Brexit governance rendered stream coupling untenable.

This dynamic reinforces the explanatory utility of MSF in post-crisis governance environments. It illustrates how windows of opportunity can be structurally present yet practically inaccessible—closed not by lack of knowledge or institutional capacity, but by the discursive and ideological filtering of what counts as feasible, legitimate, or "British" policy. It also speaks to the broader phenomenon of "managed inaction," where governments maintain the symbolic performance of leadership while systematically avoiding the costs of reform.

In sum, the UK's post-Brexit handling of farm antibiotic policy reveals the limits of technical rationality in political decision-making. It underscores that evidence does not drive policy change in isolation; it must navigate through layers of political meaning, institutional complexity, and ideological resistance. Brexit may have presented the appearance of a policy window—but behind that appearance lay a politics of strategic avoidance, rhetorical flexibility, and deep regulatory hesitation.

10 | Summary and Conclusion

This study set out to examine how Brexit reconfigured the politics and governance of antimicrobial resistance (AMR) in UK agriculture, with specific attention to the contested question of banning the prophylactic use of antibiotics in farm animals. By applying MSF, the research mapped how the problem, policy, and politics streams evolved in the wake of Brexit and revealed why a seemingly favorable policy window failed to result in legislative change.

The findings reveal a paradox at the center of post-Brexit AMR governance: while evidence of the risks of overusing antibiotics is extensive and well-communicated, political and ideological filters have distorted the uptake of that evidence. This distortion has produced regulatory ambiguity—a state in which governments speak of high standards but hesitate to enforce them. This regulatory ambiguity is emblematic of a broader trend in UK governance post-Brexit, wherein the rhetoric of "taking back control" has often resulted in either selective deregulation or policy inertia (Asiamah 2024a, 2024b).

Theoretically, this study contributes to recent efforts to refine the MSF by showing how political windows do not always yield action—even when the streams are populated. Brexit represents what we might call a meta-policy window: a structural rupture that simultaneously opens and narrows opportunities, depending on how it is interpreted by political actors. While Brexit allowed for regulatory divergence and new agenda-setting possibilities, it also reshaped the criteria of political acceptability. As the findings show, policy ideas that were once viable became ideologically unpalatable. The politics stream, reoriented around sovereignty, deregulation, and trade liberalization, exerted a gravitational pull that dragged the policy stream away from statutory control and toward industry-led solutions. This misalignment reflects a broader trend of evidence-informed policy inertia, where political optics dominate over scientific consensus.

One of the most striking insights of this study is how evidence was not rejected—but reinterpreted. Advocacy groups and industry actors both cited reductions in antibiotic use but drew opposing conclusions. Public health experts called for more regulation; veterinary groups argued existing efforts were sufficient. This contestation shows that evidence does not "speak for itself" but is mobilized through strategic framing, especially in ideologically charged environments. In such contexts, evidence functions as a resource, not a determinant. It enters the political arena as part of advocacy strategies, where its meaning is filtered through values, interests, and institutional roles. This insight reinforces calls from policy scholars (e.g., Parkhurst 2017) to focus not just on "getting the evidence right," but on understanding the politics of evidence use.

Moreover, the current reliance on voluntary industry measures in the UK reveals both the strengths and limits of non-legislative governance. On one hand, the livestock industry has made notable progress, particularly in reducing growth-promoter usage. On the other hand, voluntarism lacks enforcement mechanisms, making it vulnerable to backsliding—especially when economic pressures intensify. Moreover, the UK's decision not to align with EU Regulation 2019/6 has trade implications. Regulatory divergence may complicate access to EU markets and signal to potential partners (e.g., the US) that the UK is amenable to weaker standards. This balancing act—between asserting regulatory independence and upholding global health commitments—has created a governance limbo where policy drift becomes the norm.

Looking ahead, the recent political transition in the UK (with a new Labour government) may shift the dynamics. Many Labour politicians previously endorsed tighter controls on prophylactic antibiotic use. As such, the current period may offer a renewed policy window, especially if political leaders are willing to reframe AMR governance as part of a broader agenda on food system sustainability and public health resilience.

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This study is limited by its focus on a single national context during a defined post-Brexit period. While rich in stakeholder perspectives, it does not provide longitudinal data on how antibiotic use and resistance patterns may change under different regulatory regimes. Future research should explore comparative trajectories between countries that adopted statutory bans and those that maintained voluntary approaches. In addition, further conceptual development of the MSF could integrate insights from advocacy coalition theory, particularly around how belief systems and institutional alliances persist across electoral cycles.

The UK's experience of post-Brexit AMR governance illustrates that policy change is not always driven by evidence, nor enabled simply by the availability of alternatives. Rather, it is contingent on political receptivity, institutional leadership, and the ideological framing of responsibility. By analyzing this case through the MSF, this study reveals how even well-recognized problems and feasible solutions can falter in the face of ambiguous political priorities. Understanding such dynamics is vital—not only for AMR but for any policy area where science, politics, and ideology collide.

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Conflicts of Interest

The author declares no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Appendix 1

Official Documents Analyzed

Document title	Source	Relevance
Swann Report	Government of the UK	Foundational AMR governance recommendations
O'Neill Commission Report	UK Government Commission	Economic analysis and policy recommendations on AMR
EU Regulation (EU) 2019/6	European Union	Legislation influencing post-Brexit AMR policy
UK Veterinary Antibiotic Resistance and Sales Surveillance Report (2019)	Veterinary Medicines Directorate	Data on antibiotic usage in agriculture
Parliamentary Debates Hansard (2016), Parliamentary Debates Hansard (2023)	UK Parliament	Discussions shaping UK AMR policy
DEFRA Policy Statements (Various)	DEFRA	Key policy directions post-Brexit
ASOA Publications (Various)	Alliance to Save Our Antibiotics	Advocacy framing AMR as a public health crisis
RUMA Position Papers (Various)	Responsible Use of Medicines in Agriculture Alliance	Industry-led voluntary measures and advocacy

Appendix 2

List of Anonymized Interviwees

Interviewee role	Sector/organization
Industry Representative	Livestock Industry
Industry Representative	Veterinary Medicine
Industry Representative	Dairy Industry
Industry Representative	Poultry Industry
Industry Representative	Pig Farming
Advocacy Leader	Public Health Advocacy
Advocacy Leader	AMR Advocacy
Advocacy Leader	Consumer Advocacy
Advocacy Leader	Environmental Advocacy
Government Department	DEFRA
Government Department	Veterinary Medicines Diretorate
Academic Expert	AMR Policy Research
Academic Expert	Veterinary Science Research

Appendix 3

Codes and Nodes

Code	Theme	Description
AMR prevalence indicators	Problem Stream	Data highlighting AMR risks in agriculture
Framing of AMR as a public health issue	Problem stream	Advocacy narratives emphasizing public health threats
Impact of Brexit on problem recognition	Problem stream	Changes in AMR framing post-Brexit
Evaluation of policy alternatives	Policy stream	Comparison of voluntary vs. legislative approaches
Sovereignty and deregulation ideologies	Politics stream	Political framing of regulatory autonomy
Stakeholder use of scientific evidence	Evidence integration	Use of evidence to justify policy positions

Biography

George Asiamah is a Fellow and Tutor at Exeter College, University of Oxford.

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