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Overcoming Silos for One Health

Key Determinants of One Health Governance Platforms in Low- and Lower-Middle-Income Countries

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Abstract

This study addresses a critical gap in One Health governance literature by providing a comprehensive review of cross-sectoral One Health governance platforms in low- and lower-middle-income countries across Asia and Africa. These platforms are pivotal for building resilience and improving governance at the human–animal–environment interface. Using a scoping review methodology, the study identifies 34 One Health platforms established across 52% of these countries, with a primary focus on zoonotic diseases and a growing emphasis on antimicrobial resistance and food safety. A polycentric governance lens was applied to analyse the interplay of authority, resources and information in shaping platform functionality. Key findings highlight that authority imbalances and single-sector dominance undermine stakeholder engagement, insufficient financial and human resources hinder operational capacity. Furthermore, weak data-sharing protocols limit timely coordination and evidence-based decision-making. The review identifies critical entry points for enhancing platform efficacy: clarifying governance frameworks, investing in cross-sectoral human capacity-building and strengthening data-sharing infrastructures with robust protocols and interoperable platforms.

Keywords: One Health, governance, platforms, collaboration, LLMIC

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Abbreviations

AMR	antimicrobial resistance
IAD	Institutional Analysis and Development
LLMICs	low- and lower-middle-income countries
LMICs	low- and middle-income countries
MoU	memorandum of understanding
OH	One Health

1 Introduction

The human–animal–environment interface presents a number of public health challenges (e.g. zoonotic diseases, anti-microbial resistance) that cannot be handled by a single sector (Zinsstag, Schelling, Wyss, & Mahamat, 2005). One Health is a concept that refers to the interlinkages of human, animal and environmental health, defined by One Health High-Level Expert Panel as an integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals and ecosystems. It recognises that the health of humans, domestic and wild animals, plants and the wider environment (including ecosystems) are closely linked and interdependent (OHHLEP [One Health High-Level Expert Panel], 2021). One Health emphasises collaboration and coordination across various sectors and disciplines. It contributes to the secure health of humans, animals and the environment by addressing multiple challenges such as infectious disease outbreaks, the development of anti-microbial resistance, food safety, and promoting the health and integrity of our ecosystem (Errecaborde et al., 2019).

The practical implementation of the One Health approach is central to fostering resilient societies during health challenges. According to Blanchet, Nam, Ramalingam and Pozo-Martin (2017), societies and health systems can maintain stable control over their structure and functions while remaining equipped for future health threats. This underscores the importance of a cross-sectoral, integrated human, animal and environmental health system that can anticipate, absorb, recover from and adapt to health risks – whether arising from infectious disease outbreaks, climate change or other interconnected challenges.

However, despite the unanimous calls for cross-sectoral collaboration as an underlying principle for One Health, human, animal and environmental issues continue to be governed under ministerial silos, often attributed to political economy issues, power asymmetries and conflicting goals across sectors of governance (Nyatanyi et al., 2017; Ribeiro, van de Burgwal, & Regeer, 2019). Convergence towards the sustainable implementation of the One Health approach is often complex if the organisations or agencies involved in the partnership have distinct goals, different operating areas and a need for more integration arising from the interdependencies between their goals (Alderwick, Hutchings, Briggs, & Mays, 2021).

In the past, several attempts have been made to overcome these cross-sectoral coordination challenges, particularly by establishing a One Health coordination mechanism, also commonly known as One Health platforms (Fasina et al., 2022; Ghai et al., 2022).[1] These platforms/ coordination mechanisms refer to any formalised, standing group that strengthens or develops collaboration, communication and coordination among sectors at the human–animal–environment interface. They can support national and sub-national authorities with improving governance and coordination, allow ministries (or agencies) to interact regularly to support improved preparedness and response for One Health challenges, and create a way to coordinate all One Health activities across all relevant sectors (WHO [World Health Organization], 2019). The operational modes of One Health platforms depend on the country's needs and priorities, and they can include different mechanisms (e.g. steering committee, inter-sectoral coordination unit, One Health office, etc.).

The scientific literature presently lacks a comprehensive review of One Health platforms from low- and lower-middle-income countries (LLMICs) (Heitz-Tokpa et al., 2024). These countries often face various public health issues at the human–animal–environment interface, compounded by scarce resources. This situation underscores the necessity of bolstering multi-sectoral coordination to address these issues effectively. It is imperative to explore the critical factors contributing to the effective implementation of One Health platforms in these countries, although they have not been adequately investigated (Mwatondo et al., 2023). This Discussion

1 We will refer to these mechanisms as One Health platforms throughout the paper.

Paper, therefore, aims to answer the following research questions: i) What is the operationalisation level of One Health platforms in LLMICs, particularly when focusing on regions in Africa and Asia? ii) What are the key determinants of their functioning?

The initial question is addressed through a comprehensive scoping review encompassing policy-level documents, strategic plans from various ministries, research articles and other pertinent sources to collate information across all LLMICs in Africa and Asia. Building on the insights derived from this review, the second question is explored through the analytical lenses of polycentricity – based on Ostrom, Tiebout and Warren's (1961) premise of polycentric governance – and Koontz and Garrick's (2019) proposition on the role of authority, information and resources in determining the interactions among actors in polycentric systems. Although decision-makers in the relevant sectors of One Health interact with each other at different levels through various formal and informal processes, One Health governance platforms are purposive institutional arrangements designed to interact in a coordinated manner in order to achieve shared outcomes; therefore, they can be analysed by employing a polycentric governance approach.

The rest of the Discussion Paper is organised as follows. Section 2 defines the key theoretical concepts, particularly the polycentric governance approach used to analyse the review results. Section 3 describes the methods and the scope of this review. Section 4 presents the findings, including an overview of One Health governance and coordination platforms in LLMICs and the challenges faced during operationalisation. Section 5 discusses the key determinants for the functioning of One Health platforms and Section 6 concludes.

2 Coordination in polycentric One Health governance: conceptual framework

The concept of One Health deals with the issues arising from interactions among human, animal and ecological systems. As a normative approach, One Health strategies aim at integrating policies or methods for securing human, animal and environmental health that are designed and implemented within formally independent sectors. The characteristics of the formal independence of the decision centres (sectors) involved – despite the existence of functional interdependencies among their actions, the various interactions they enter into and the purposive institutional arrangements for coordination among them – fulfil the criteria of polycentric systems, based on the definition given by Ostrom et al. (1961). What kinds of interactions the different decision centres enter into, the choice of coordination mechanisms and their effectiveness in a particular context are subjects for an empirical inquiry.

Analyses using a polycentricity lens typically examine the interactions and arrangements for coordination among decision centres and how these arrangements impact governance performance (Thiel, 2016). The Institutional Analysis and Development (IAD) framework (Ostrom, Gardner, & Walker, 1994) is one of the most widely used analytical frameworks for operationalizing the polycentricity approach. Scholars have traditionally applied the IAD framework towards analysing institutions and governance in order to provide public and common goods, involving the self-organisation of communities to manage their natural resources. These analyses predominantly focus on single-action situations and use various methods such as case studies, experiments and modelling (Kimmich, 2013; Poteete, Janssen, & Ostrom, 2010). Enhancements to the IAD framework, which incorporate adjacent action situations (McGinnis, 2011), have enabled the analysis of interactions across networked action situations that are involved in producing multiple interlinked public goods. This is particularly relevant in light of the growing demands for improved coordination across numerous sectors in delivering public goods, whereby activities in one domain can positively or negatively influence

outcomes in others. Notable examples include the water–energy–food nexus and the One Health approach.

Building on this understanding, coordination emerges as an essential element of a polycentric governance framework. Although decision-makers in relevant sectors of One Health interact with each other at different levels through various formal and informal processes, the One Health platforms are purposive formal institutional arrangements that allow these actors to interact in a coordinated manner to achieve common outcomes. Koontz and Garrick (2019) highlight *authority, information and resources* as key factors shaping interactions in polycentric governance systems.

These factors shape the multitude of informal and formal interactions among actors, and not just the interactions facilitated by the purposively designed arrangements for coordination. In polycentric governance systems, informal interactions – such as trust, personal relationships and social norms – can complement formal rules and institutions by facilitating coordination, building trust and enhancing adaptability across multiple centres of authority (Carlisle & Gruby, 2019; Morrison et al., 2019). However, they can also introduce power asymmetries and accountability challenges when informal networks enable actors to bypass formal procedures or dominate decision-making (Clement, 2010). For example, Oberhauser, Hägele and Dombrowsky (2023) find that the informal subsystem of *wasta* and the broader social contract in Jordan fundamentally undermine formal groundwater governance in the Azraq basin. These informal institutions enable powerful actors to bend or bypass official rules, secure access to groundwater through personal or tribal networks, while weakening rule enforcement and creating systemic inequality among farmers. This dynamic impedes collective efforts and policy reforms aimed at sustainable resource use. Therefore, the interplay between the informal and formal (platforms) mechanisms of interactions in One Health is crucial to both the performance and legitimacy of these One Health platforms. Exploring the multitude of informal and formal interactions, their determinants and their interplay with formal mechanisms can only be done through in-depth case study-based approaches. In the current paper, based on a scoping review, we restrict our analysis to national One Health platforms that aim to coordinate formal interactions among One Health actors.

Authority defines the limitations of different decision centres, allowing them or forbidding them to take particular actions or enter or exit specific interactions with each other. In the public sector, authority is usually assigned or devolved by a higher constitutional authority. Devolution of authority is an essential element of various decentralisation strategies pursued in different parts of the world, involving both responsibility and constitutionally backed power to make decisions regarding production and social, political and legal transactions concerning a specified policy area and jurisdiction. Effective decentralisation of authority may guarantee the formal autonomy of a decision-making centre, which is an essential attribute of polycentric governance systems. Authority may be unevenly distributed among the sectors involved, with the human health sector often taking precedence, followed by the animal health sector, whereas the environmental sector and others often assume a subordinate role. Authority may facilitate competitive, cooperative and regulatory contracts among decision centres. Which interactions emerge further depends on other conditions of access to information and resources.

Information including the roles and responsibilities of the various actors helps increase the accountability and transparency of the governance process. For example, information on the costs and benefits of the production and provision of human and veterinary health services – including the externalities (untreated sewage, hospital waste, pharmaceutical effluents, intensive cultivation systems) – is crucial for actors in different action situations to help them decide on alternatives of production and negotiate/coordinate with other actors.

Access to financial, human and natural *resources* is vital to carrying out the assigned or agreed-upon roles and responsibilities in generating public goods or monitoring the provision of goods

and services. Distribution of access to key resources also defines the power relations among actors in a governance system. Actors with a shared mandate may enter into cooperative relationships of sharing resources and complementing each other in achieving shared goals.

The interactions or coordination mechanisms in a given context depend on authority, information and resource distribution across decision centres. These three key factors often interact to amplify their collective effects on coordination. Empirical research provides several concrete examples. In Spain's irrigation governance, clear lines of authority, robust resource-sharing mechanisms and transparent information flows collectively fostered trust and facilitated collective action (Villamayor-Tomas, Grundmann, Epstein, Evans, & Kimmich, 2015). By contrast, in the governance of the Mekong River, the lack of a central authority, uneven resource distribution and poor information exchange heightened tensions among riparian nations (Molle, 2007). Similarly, Mudaliar's (2023) examination of fisheries in Lake Victoria, Tanzania, emphasises that while authority, resources and information can foster cooperation in polycentric systems, their misalignment or misuse can lead to conflicts, inefficiencies and maladaptive outcomes.

3 Scoping review methods

This Discussion Paper provides an overview of One Health platforms from LLMICs in Africa and Asia.[2] To provide this overview, we utilised the scoping review methods developed by Arksey and O'Malley (2005) and Levac, Colquhoun and O'Brien (2010). We reviewed policy-level documents, strategic plans developed by the ministries of the respective countries, research articles and other relevant documents to gather available information from implemented One Health platforms. For our review, we followed the definition of One Health platforms and coordination mechanism from WHO (2019). According to this definition, they are any formalised group that strengthens or develops collaboration, communication and coordination among sectors at the human–animal–environment interface. Such platforms or mechanisms have routine, ongoing functions and are responsible for the coordination, leadership and governance of efforts among the relevant sectors to achieve jointly agreed goals. They can include steering committees, technical working groups or inter-sectoral coordination units.

To narrow the scope of this review, we concentrate on literature that provides evidence regarding the implementation of One Health platforms in LLMICs and discuss their implementation challenges. We restrict our analysis to national One Health platforms that aim to coordinate formal interactions among One Health actors. Upon retrieving all pertinent documents, we conducted a thorough screening and review process for data extraction. This involved compiling general information about each specific platform and details on its various dimensions. The prime extraction focused on the dimensions, such as the name, implementation year, geographical area, One Health priority area and involved sectors/ministries. Along with this, information on achievements and challenges in their operationalisation was extracted. Following the review and analysis of the challenges and

2 Africa includes 44 LLMICs. The low-income countries are Burkina Faso, Burundi, Central African Republic, Chad, Democratic Republic of the Congo, Eritrea, Ethiopia, The Gambia, Guinea-Bissau, Liberia, Madagascar, Malawi, Mali, Mozambique, Niger, Somalia, South Sudan, Sudan, Sierra Leone, Togo, Uganda and Zimbabwe. The lower-middle-income countries are Angola, Benin, Cabo Verde, Cameroon, Comoros, Republic of the Congo, Côte d'Ivoire, Djibouti, Egypt, Eswatini, Ghana, Guinea, Kenya, Lesotho, Mauritania, Morocco, Nigeria, São Tomé and Príncipe, Senegal, Tanzania, Tunisia and Zambia. Asia includes 21 LLMICs. The low-income countries are Afghanistan, North Korea (Democratic People's Republic of Korea) and Yemen. The lower-middle-income countries are Bangladesh, Bhutan, Cambodia, India, Indonesia, Kyrgyzstan, Laos (Lao People's Democratic Republic), Myanmar, Nepal, Pakistan, Papua New Guinea, the Philippines, Sri Lanka, Syria (Syrian Arab Republic), Tajikistan, Timor-Leste, Uzbekistan and Vietnam.

achievements encountered, key determinants critical to the successful functioning of the One Health platforms were synthesised using the analytical lens of polycentricity.

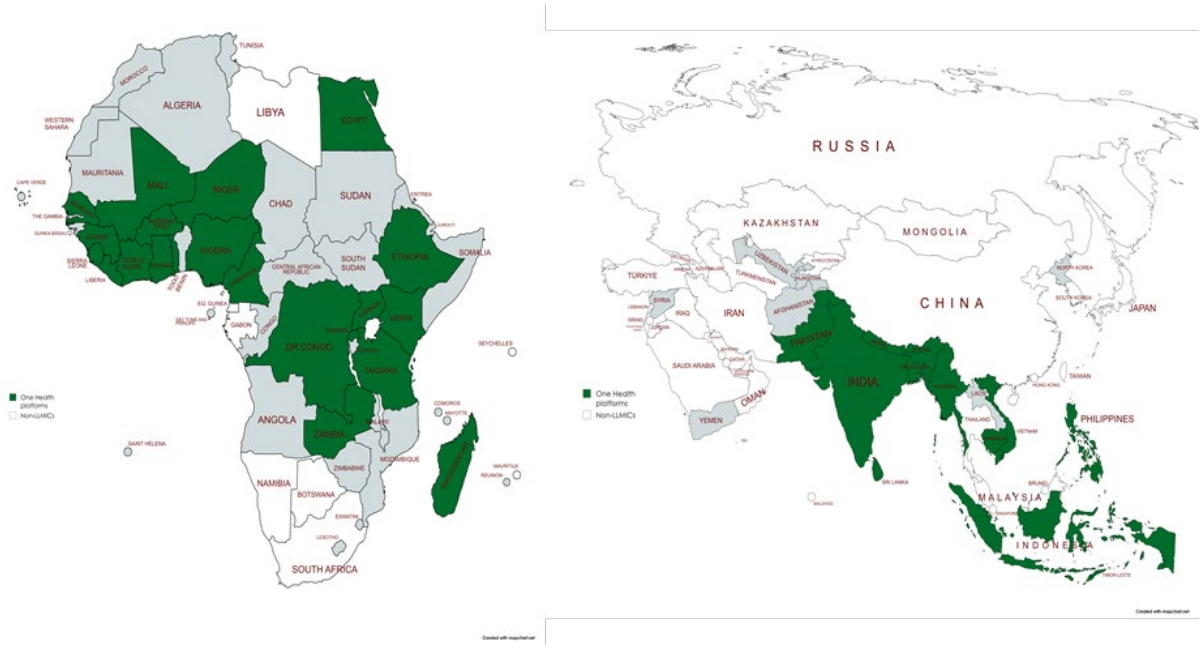
This scoping review has several limitations. First, although we aimed to be as comprehensive as possible, it is possible that some platforms, particularly those existing in alternative or less prominent forms, were not captured in our review. As a result, the findings are based solely on the platforms included. Second, the review was conducted in 2023 and 2024, which means that platforms established very recently may not have been captured. Third, evaluating the effectiveness of each One Health platform would have been valuable; however, this was not feasible due to the lack of available impact evaluation studies.

4 Findings

4.1 Overview of operationalisation of One Health platforms

During this scoping review, we identified documents (e.g. reports, research articles, strategies) that provide information about the platforms and detail their implementation outcomes and challenges. One Health platforms have been established in 34 of the 65 LLMICs (52%) across Africa and Asia, including 21 of 44 LLMICs in Africa (48%) and 13 of 21 countries in Asia (62%). A notable trend is observed: Although several Asian countries have adopted two or more platforms – mainly targeting zoonotic diseases and the fight against antimicrobial resistance (AMR) – the focus in many African countries is primarily on combating zoonotic diseases. However, many African One Health platforms address multiple concerns – such as AMR and food safety – within a single integrated platform. The distribution of the platforms for Africa and Asia is depicted in Figure 1. Countries highlighted in green have implemented One Health platforms, grey areas represent LLMICs without implementation and white indicates non-LLMICs.

Figure 1: Availability of One Health platforms in Africa and Asia

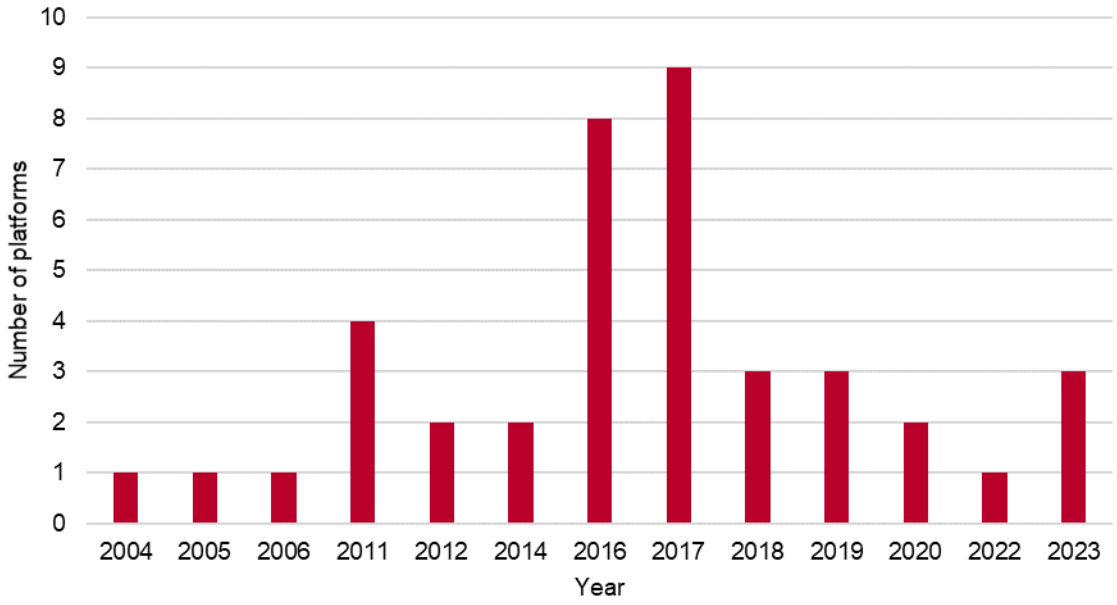


Notes: Countries highlighted in green have implemented One Health platforms, grey areas represent LLMICs without implementation and white indicates non-LLMICs.

Source: Authors, based on own scoping review. Created with Datawrapper.

Figure 2 provides an overview of the implementation timeline of One Health platforms, illustrating the number of platforms introduced annually between 2004 and 2023. The figure reveals a steady, low rate of platform introduction from 2004 until 2011. The pace accelerates significantly in 2016 and 2017, marking the peak years of activity, with the highest number of platforms (9) having been introduced in 2017. After this peak, the numbers decline and fluctuate, with a slight recovery observed in 2023. LLMICs from Asia were the early adopters of One Health platforms, with Viet Nam establishing the first in 2004, followed by Sri Lanka in 2005 and India in 2006. These early initiatives focused primarily on zoonotic diseases, addressing urgent public health threats such as avian influenza. In contrast, African countries began implementing One Health platforms later, starting in 2011 with initiatives in Rwanda and DR Congo, which primarily focused on zoonotic diseases as well. By 2017, Kenya introduced an AMR-specific platform, while other African nations, such as Senegal and Zambia, continued to prioritise zoonotic diseases. Asian countries consistently led in the implementation of One Health platforms, taking early and sustained action to address zoonotic diseases. African countries, despite starting later, demonstrated progress during the scale-up phase, particularly from 2016, driven in part by the lessons learnt and challenges faced during the 2014-2016 Ebola crisis in West Africa (Cham, Barrow, Shah-Rohlfs, & Standley, 2024).

Figure 2: Number of platforms implemented by year

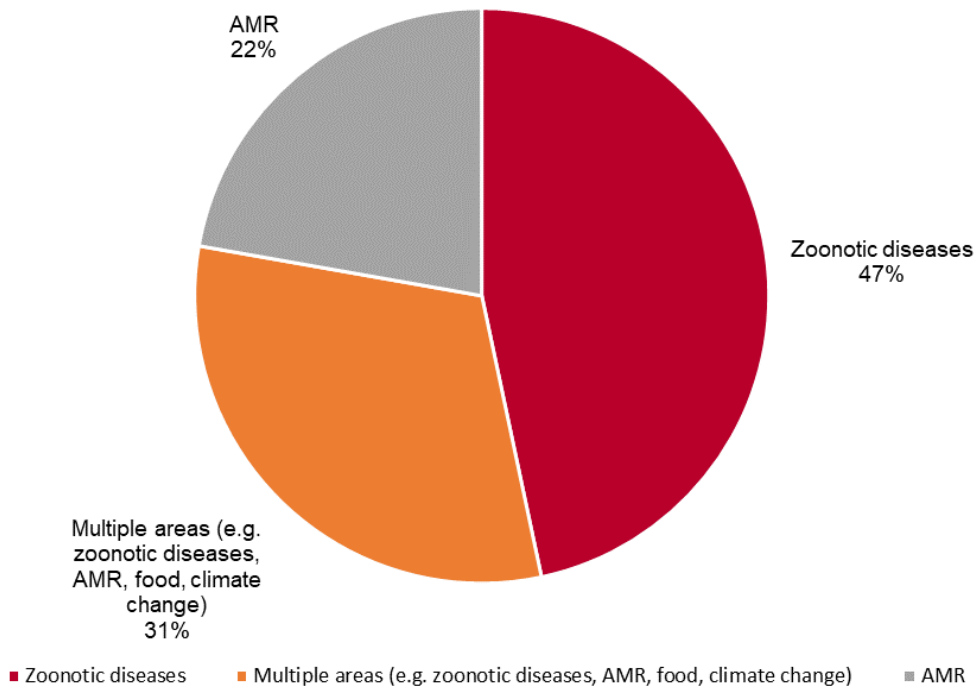


Notes: If a year does not appear, no platform was launched in that year.

Source: Authors

Focusing on the priority areas of the platforms, the analysis reveals that the key priority is zoonotic diseases. As illustrated in Figure 3, zoonotic diseases represent the most significant focus area, with 47% of the platforms exclusively dedicated to addressing them. Additionally, 31% of the platforms address multiple One Health issues, including zoonotic diseases, AMR, food safety and partly climate change, while 22% focus on AMR. This distribution highlights the significant emphasis on zoonotic diseases.

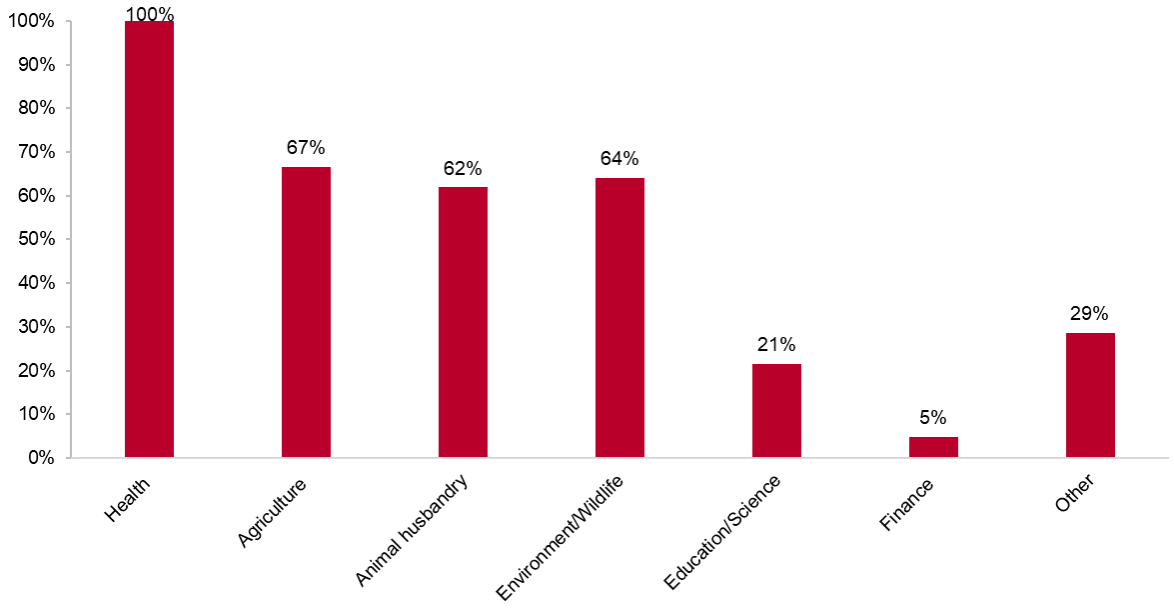
Figure 3: Priority areas of One Health governance and coordination platforms



Source: Authors

Figure 4 demonstrates the critical role of the health sector in developing One Health governance. The Ministry of Health is consistently involved in One Health platforms (100%) across low- and middle-income countries (LMICs). The agriculture and animal husbandry sectors also contribute significantly, with the agriculture sector included in 67% of the platforms and the animal husbandry sector in 62%. This involvement aligns with expectations, as most platforms focus on zoonotic diseases and/or AMR, which naturally engage health and veterinary sectors more directly than others. Additionally, the environmental/wildlife sector is represented in 64% of all platforms. As a next step, we examine whether there is a discernible disparity in the participation of various sectors between platforms that focus on multiple One Health issues and those that focus solely on zoonotic disease or AMR.

Figure 4: Key sectors/ministries involved in One Health platforms

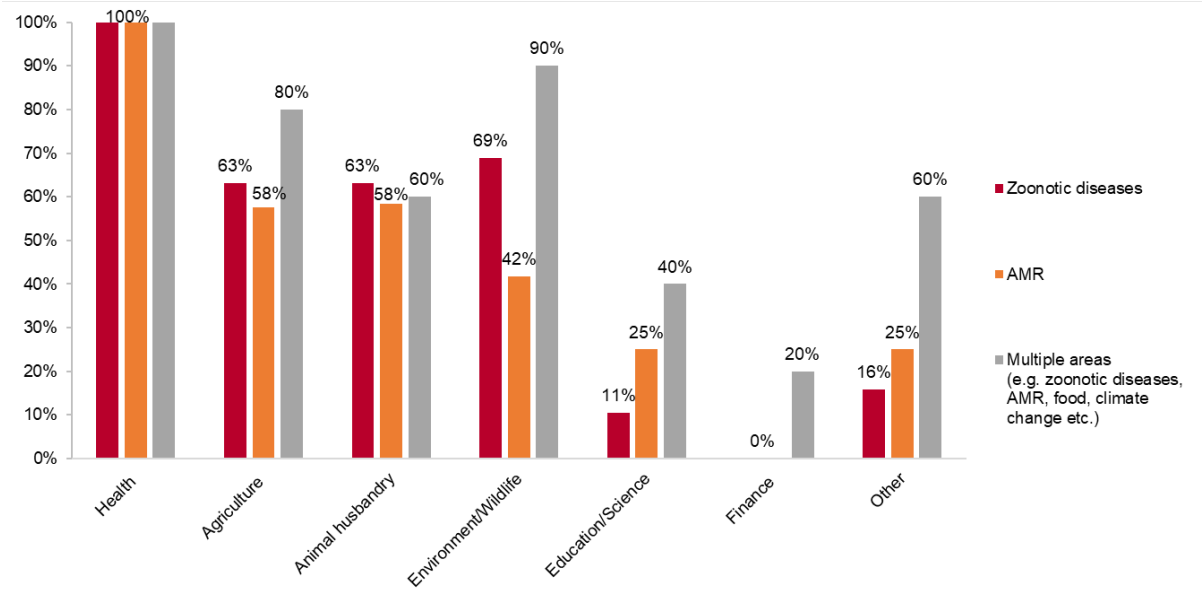


Notes: Other sectors refer to culture, tourism, social affairs, land reclamation, trade, development.

Source: Authors

Figure 5 delineates the sector participation rates in One Health platforms across LLMICs in Africa and Asia. In platforms targeting zoonotic diseases, the health sector is present in all cases (100%), while the environmental sector participates in 69% of these platforms. The agriculture and animal husbandry sectors are each represented in 63% of platforms. The education sector has a minimal presence, appearing in only 11% of platforms, and other sectors, including trade and social affairs, are involved in 25% of them. For AMR-focused platforms, the health sector consistently participates (100%). The environmental sector is involved in 42% of these platforms, with agriculture and animal husbandry each represented in 58% of cases. The education sector is included in 25% of platforms, and other sectors show slightly less participation at 16%. In platforms that address multiple One Health issues, the health sector is again represented in all platforms (100%). The agriculture sector shows a robust involvement at 80%, with animal husbandry and the environment participating in 69% and 58% of platforms, respectively. Education is involved more in these broader scope platforms, appearing in 40% of them, while finance and other sectors have higher levels of involvement at 20% and 60%, respectively. These findings emphasise the health sector's participation across all platforms while identifying significant disparities in engagement from other sectors, particularly the environment and finance. Strengthening the participation of underrepresented sectors is crucial to achieving a balanced, comprehensive approach to One Health challenges.

Figure 5: Key sectors involved in One Health platforms according to their priority area



Notes: Other sectors refer to culture, tourism, social affairs, land reclamation, trade, development, food.

Source: Authors

4.2 Implementation achievements and challenges of One Health governance platforms

Our analysis of One Health platforms in LLMICs has identified achievements and challenges that supported or impeded effective functioning. The subsequent sections provide an in-depth discussion of such achievements and challenges linked to the three key factors of polycentric governance identified by Koontz and Garrick (2019): *authority, information and resources*. Comprehensive details of each platform, the summarised achievement and the challenges are included in Table A1 in the Appendix. The Appendix includes all identified documents (e.g. reports, research articles, strategies) that provide information about the platforms and detail their implementation outcomes and challenges.

Authority

The distribution and devolution of authority are pivotal in defining leadership roles, accountability and ownership within One Health platforms. The effective regulation of authority can mitigate power struggles and ensure a shared sense of ownership and responsibility among all participating sectors. Countries such as Kenya and Nepal have encountered significant issues in implementing their coordination mechanisms due to leadership challenges, limited coordinated efforts among stakeholders and an absence of necessary policies for inter-sectoral collaboration (Acharya, Karki, Shrestha, & Kaphle, 2019; Kimani et al., 2019). The functioning of One Health platforms is notably reduced when they are perceived to be led by a single ministry such as health, agriculture or animal husbandry rather than being a genuinely collaborative, multisectoral endeavour (Asaaga et al., 2021; Berthe et al., 2018; Waswa et al., 2024). Addressing the power dynamics and fostering a shared sense of ownership and responsibility among all participating sectors is essential for enhancing the effectiveness and sustainability of platforms. To improve multisectoral coordination, dedicated leadership must balance such power dynamics among various sectors and institutions (Agbo et al., 2019; Heitz-Tokpa et al., 2024). For example, as demonstrated in the cases of Rwanda and Tanzania, establishing a

formal position for the One Health governance platform within the government hierarchy was an essential step (Igihozo et al., 2022; Kitua et al., 2019). This was accomplished through legislative mandates that clearly define the platform's roles, responsibilities and authority, ensuring its recognition as an essential component of the overall national health governance framework.

Information

Establishing stringent and transparent protocols for information exchange is fundamental for successful One Health platform implementation, highlighting the essential role of information in enhancing coordination and collaboration among various sectors (USAID [US Agency for International Development], 2018; WHO, 2019). In countries such as Uganda, India and Nepal, the absence of established protocols for information exchange is evident (Acharya et al., 2019; Asaaga et al., 2021; Buregyeya et al., 2020). In several countries, regular information-sharing does not occur routinely, including the sharing of outbreak investigation reports between human and animal health sectors (Lagayan, 2020). Significant challenges have been identified, including the difficulty in reaching a consensus on pre-established rules for information-sharing at the operational level, which often highlights the limitations of a rigid top-down approach (Igihozo et al., 2022). Additional obstacles include a lack of foundational mutual trust, varying organisational priorities, and regulatory and legal barriers to information-sharing (Tang-wangvivat et al., 2019). Moreover, differences in organisational cultures across sectors further complicate the realisation of information exchange (Asaaga et al., 2021). This can lead to ambiguity in defining roles and responsibilities, subsequently impacting the execution of One Health platforms.

A further common issue documented across numerous One Health platforms pertains to the difficulties experienced in communication among the various involved sectors (Fasina et al., 2021). Countries such as Kenya, Ethiopia, Rwanda, Cameroon, Uganda, the Philippines, India and Bhutan have reported encountering substantial obstacles in establishing effective cross-sectoral communication (Asaaga et al., 2021; Buregyeya et al., 2020; Erkyihun, Gari, Edao, & Kassa, 2022; Fossouo & Mouliom, 2024; Igihozo et al., 2022; Kimani et al., 2019; Lagayan, 2020). This indicates a critical need for enhanced communication strategies and practices that can bridge gaps, align interests and promote cohesive action among the various stakeholders involved in One Health platforms.

Resources

The allocation and availability of financial resources are crucial for the functioning of One Health platforms. Addressing the inadequacy of funding and infrastructure requires effective mobilisation and allocation of resources, underscoring the significance of resource distribution in operationalising and executing One Health initiatives.

A notable challenge in many countries is the inadequacy of funding, particularly the lack of dedicated funds for One Health initiatives, which poses significant difficulties in operationalising and executing various activities, including One Health platforms (Agbo et al., 2019; Isoda, 2019; Lagayan, 2020). This issue of insufficient and unsustainable funding is prevalent in African countries (including the ECOWAS region) such as Rwanda, Uganda, Ethiopia and Cameroon (Erkyihun et al., 2022; Fossouo & Mouliom, 2024; Igihozo et al., 2022; Lokossou et al., 2021; Waswa et al., 2024) and Asian countries such as Nepal (Acharya et al., 2019). One can observe that funding for zoonotic diseases significantly exceeds the amount allocated for other priority areas, such as AMR, with current investment levels in AMR being approximately 10 times lower (Africa CDC, 2024). This discrepancy indicates a disease-driven approach in funding allocation, impacting the effectiveness of One Health platforms, which focuses on AMR.

Moreover, beyond the financial aspects, the inadequacy of resources, such as technical capacity and laboratory infrastructure, further compounds these challenges. In countries such as Kenya, Guinea and Egypt, the ineffective mobilisation and allocation of resources between sectors have been identified as significant impediments (Allal et al., 2019; Kimani et al., 2019; Standley et al., 2019). This resource limitation restricts the ability to conduct joint response activities and impacts the overall operational effectiveness of the One Health platforms. Therefore, the lack of sustainable funding and adequate infrastructure emerges as a critical barrier to the successful implementation and long-term viability of One Health initiatives.

Challenges associated with human resources – including skill gaps in cross-sector cooperation and One Health knowledge – are significant in many countries and highlight the need for the adequate allocation and development of human resources. Countries in Africa, such as Kenya, Rwanda, Uganda, Tanzania and Egypt (Allal et al., 2019; Kimani et al., 2019; Kitua et al., 2019; Waswa et al., 2024), as well as Asian countries, including Bangladesh, Nepal and Vietnam (Acharya et al., 2019; Ahmed, Naher, Tune, & Islam, 2022; Bordier et al., 2018), have reported human resource-related challenges as significant obstacles in the deployment and functioning of their One Health platforms. Predominantly, the largest challenge lies not just in the availability of skilled personnel, but more critically in the knowledge and skills of how to foster effective cross-sectoral cooperation within One Health platforms (Lagayan, 2020; Lokossou et al., 2021). Further key issues frequently identified in relation to human resources include the high turnover of senior-level staff, a lack of the necessary personnel and inadequate allocation of staff resources (Ahmed et al., 2022). Given that the success of One Health platforms is inherently linked to cross-sectoral collaboration, the capability of human resources becomes a pivotal factor. A lack of understanding of the core principles of One Health among staff can lead to deficient coordination, communication and collaboration between different sectors (World Bank, 2012). This, in turn, can significantly impede the integration and effective implementation.

5 Discussion

5.1 Interplay between authority, resources and information

The interplay between authority, resources and information emerges as a critical factor influencing the functioning of One Health platforms. Based on the scoping review of existing One Health platforms and their challenges during operationalisation, a holistic approach that effectively integrates these three elements is essential for improving coordination. The findings showed that One Health platforms have been implemented in 52% of LLMICs in Africa and Asia, with Asia leading early adoption. Key challenges include weak cross-sectoral information-sharing protocols and resource constraints such as inadequate funding and skilled personnel. Challenges with authority in One Health platforms stem from power imbalances and single-ministry dominance. The following discussion examines the interplay between authority, resources and information, identifying the key determinants necessary to overcome barriers and enhance the functioning of One Health platforms.

Authority and its implications

Sectoral actors need clear mandates that authorise them to participate in the processes of making decisions about prioritising actions and allocating resources for different actions among others. To which sectors the higher-level central constitutional authority grants precedence to lead the processes of coordination depends on the socio-economic development level of the country and the most imminent risks it faces. The prioritisation of One Health strategies further depends on which sector is mandated with leading the mechanisms and which sectors are subordinated. A clear and equitable distribution of authority among sectors can foster an

inclusive environment in which all sectors feel valued and accountable. However, if authority is unevenly distributed or concentrated within a single ministry or sector, it can lead to power struggles, diminished stakeholder engagement and ineffective coordination. Authority also influences resource allocation and information flow. When authority structures are ambiguous, the mobilisation of financial and human resources becomes suboptimal, and information-sharing protocols are not standardised.

Establishing an institutional or legal framework, such as legislative mandates or memoranda of understanding, can strengthen authority by providing clear guidelines on governance and operations (Agbo et al., 2019). This clarity helps prevent role ambiguity and overlaps that could hinder collaboration. For example, countries such as Rwanda and Tanzania have demonstrated success by legally embedding their One Health platforms into national governance systems. These platforms benefit from legislative backing that mandates intersectoral collaboration and formally recognises their roles within the broader health governance ecosystem (Igihozo et al., 2022; Kitua et al., 2019). Uganda provides another example of ensuring equitable power-sharing among stakeholders. The country employs a rotating coordination system for its One Health platform, wherein each sector takes turns leading the platform for a specified period (Agbo et al., 2019). This approach promotes inclusivity and ensures that no single sector dominates the decision-making process. By rotating leadership responsibilities, Uganda has empowered individual ministries and enhanced mutual understanding among stakeholders. This model demonstrates how flexible authority structures can balance power dynamics, which can potentially enable effective cross-sectoral coordination.

Resources as an enabler

Resources, mainly financial and human resources, are indispensable for operationalising One Health platforms and subsequent One Health activities. However, the availability and allocation of these resources are often contingent upon the authority structures in place. Platforms with strong legal and institutional authority are better positioned to secure funding from both domestic and international sources (Lagayan, 2020; Lokossou et al., 2021). For example, Thailand has demonstrated that it has legal and institutional authority and can sustainably fund its One Health platform, but it is being classified as an upper-middle-income country (Tangwangvivat et al., 2024; Sommanustweechai et al., 2017). Although clarity in authority structures may help avoid confusion about roles and responsibilities, clearly mandated authorities alone are not sufficient to guarantee the effective implementation of One Health platforms. The assignment of authority needs to be accompanied by the commensurate allocation of resources. Persistent power imbalances among sectors often undermine the fair distribution of resources among them. The interplay between resources and information is also significant. Adequate funding enables the establishment of robust information-sharing systems, such as centralised data repositories, coordinated cross-sectoral surveillance and outbreak monitoring networks (Errecaborde et al., 2019). These systems facilitate timely and accurate data exchange, which is critical for coordinated decision-making during emergencies. For instance, in countries where One Health platforms receive consistent funding, there is often a higher degree of integration between human, animal and environmental health sectors, leading to more effective responses to zoonotic disease outbreaks (Zinsstag et al., 2023).

Equally critical is the investment in human resource capacity, as the success of One Health platforms is heavily dependent on the skills and knowledge of their members (Sullivan et al., 2023). Capacity-building initiatives should focus on cross-sectoral collaboration, conflict management and leadership skills to enhance the platform's operational efficiency. Training programmes tailored to address these needs are essential, particularly for sectors with limited exposure to cross-sectoral management and leadership practices (Errecaborde et al., 2019). Given the involvement of multiple sectors, targeted conflict-resolution training can help mitigate

potential challenges arising from differing organisational cultures and priorities across the different One Health sectors.

Resource constraints, whether financial, technical or human, can create cascading challenges in authority and information. For example, limited funding may restrict the development of essential infrastructure, such as data-sharing platforms, while low human resource capacities can impair the execution of coordinated responses of One Health platforms. This underscores the need for sustainable financing models, including domestic government funding, ensuring short-term functionality and long-term resilience.

Information as the glue for coordination

Information acts as the glue that binds the factors of authority and resources together. Without accurate, timely and transparent information, even the most well-funded and most equitably managed platforms can fail due to a lack of effective coordination. Establishing standardised information-sharing protocols is therefore critical for fostering trust and collaboration among sectors. In practice, the flow of information within One Health platforms is often hindered by legal, cultural and technical barriers (Asaaga et al., 2021; Fasina et al., 2021). For example, regulatory restrictions on data-sharing between sectors can delay critical decision-making during emergencies (Heitz-Tokpa et al., 2024). Similarly, differences in organisational priorities and communication styles can create misunderstandings and conflict (Kimani et al., 2019; Tangwangvivat et al., 2019). Addressing these challenges requires clear structures that equitably distribute authority across the One Health sectors to ensure compliance and foster collaboration, alongside adequate resources to develop and maintain robust information systems. The role of information in bridging authority and resources becomes particularly evident during health crises. During a zoonotic disease outbreak, for instance, timely data-sharing between human, animal and environmental sectors can enable early detection and response, saving lives and resources (Kelly et al., 2020).

5.2 Key determinants for the functioning of One Health platforms

All three factors – authority, resources and information – are closely interlinked, making it challenging to designate any single element as paramount. Authority forms the foundation for governance structures and informs resource allocation, while resources enable the practical implementation of tasks, including effective information-sharing mechanisms. Sufficient financial and human resources, combined with well-established authority, then facilitate robust data-sharing protocols and infrastructure to support information flow. Consequently, the interplay among these three components, rather than reliance on any single determinant, ensures the functioning of One Health platforms. However, policy-makers and stakeholders can leverage specific key entry points to rapidly improve platform functionality.

5.2.1 Clarifying governance frameworks and mandates

Clearly defined mandates, transparent responsibilities and integrated accountability measures reduce overlaps, minimise potential conflicts and provide a legal foundation for intersectoral collaboration. Initially, this framework does not need to be a formal legal document; however, certain aspects may require legal formalisation to ensure robust implementation. Key to this is the explicit detailing of a memorandum of understanding that includes the composition and formation of the platform's steering group, its members and their respective functions (regulatory and financing mechanisms). Adopting a top-down approach can help bring clarity during One Health platform implementation. Defining precise roles, responsibilities and functions for each

sector and stakeholder is essential, and this process can be guided by a higher-level authority such as the presidential office or a cross-ministerial steering committee. A clear delineation of these roles enhances stakeholder understanding, leading to more effective communication and collaboration across sectors.

5.2.2 Investing in cross-sectoral capacity-building and leadership

A key entry point is the human resource strategy: determining whether to utilise existing staff, recruit new personnel, or train existing staff and at what level. Training should focus on effective cross-sectoral cooperation within One Health platforms, conflict management and leadership skills. Since conflicts are more likely to arise with the involvement of multiple sectors, minimising them through targeted training becomes essential. It is important to recognise that not all sectors involved in the One Health platforms may have prior exposure to management and leadership training. Therefore, targeted training initiatives should be emphasised to ensure that all platform participants fully comprehend and can enact the collaborative ethos of the One Health approach. Establishing professional exchanges or rotational leadership roles across ministries can foster mutual understanding and break down institutional silos. Leadership development activities that include conflict resolution, communication strategies and systems thinking further ensure that diverse perspectives are integrated into decision-making processes.

5.2.3 Developing or strengthening data and information-sharing

Robust data collection, processing and exchange systems enable real-time surveillance, early detection and evidence-based decision-making. The adoption of interoperable platforms, standardised data formats and secure cloud-based repositories can improve the accuracy and timeliness of shared information (OHHLEP et al., 2023). Clear guidelines on data governance that includes privacy regulations and intellectual property considerations bolster trust among stakeholders (Mercuri & Emerson, 2024). Such infrastructures and protocols allow relevant ministries and agencies to integrate surveillance efforts and rapidly mobilise coordinated responses to emerging health threats.

6 Conclusion

This scoping review underscores the growing recognition of One Health platforms as essential coordination mechanisms in LLMICs, particularly in Africa and Asia. Although more than half of these countries have implemented at least one such platform, a clear emphasis on zoonotic diseases remains dominant, reflecting both the urgency and the disease-driven funding priorities within many public health systems. At the same time, AMR and food safety concerns gradually gain visibility, suggesting a trajectory towards more comprehensive One Health governance.

The analytical lens of polycentric governance provided a structured framework for examining the functioning of One Health platforms. By focusing on the key factors – authority, resources and information – the review shows the multiple interactions that can either enhance or undermine cross-sectoral collaboration. It highlights key entry points for improving platform functionality. Results show that ambiguous or unevenly distributed authority frequently results in power asymmetries, diminishing stakeholder engagement. Limited financial and human resources further restrict platform functionality and undermine cross-sectoral collaborations. The absence of standardised information-sharing protocols also emerges as a recurring obstacle, hindering the timely exchange of critical data and constraining evidence-based decision-making.

Despite these hurdles, the experiences of countries such as Rwanda, Tanzania and Uganda illustrate that well-designed institutional arrangements – backed by legislation, rotating

leadership or robust memoranda of understanding – can pave the way for more equitable governance and collaborative momentum. Success, therefore, depends on clarifying governance frameworks and mandates, sustainable financing, investing in capacity-building and leadership development, and strengthening data-sharing infrastructures. Future research should evaluate how these platforms function over time, particularly as countries seek to address newer challenges, such as the impacts of climate change on health. Systematically integrating factors of authority, resources and information to improve cross-sectoral coordination can enhance the resilience of One Health platforms, thereby advancing both human and animal health while safeguarding environmental integrity.

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Appendix

Table A1: Detailed characteristics of included One Health platforms

Sr. No.	Name of platform	Imple-menta-tion year	Geo-graph-ical area	Priority area	Ministries involved / Key organisations	Achievements	Challenges	Online link to study/paper
					African countries			
1.	Zoonotic Disease Unit	2012	Kenya	Zoonotic, emerging and re-emerging diseases	Ministry of Health Ministry of Agriculture, Livestock and Fisheries	• Significant progress towards institutionalising the OH approach such as veterinary and livestock policies and integration of OH approach in medical, nursing and veterinary curriculum • OH champions were deployed • Prioritisation of zoonotic diseases in the country • Formulation of evidence-based prevention and control interventions for zoonoses • Develop risk-map for the Rift Valley Fever and revised the contingency plan • Develop Strategic Plan for the elimination of rabies	• Low level of awareness of the approach among senior government officials • High staff turnover among senior officials • ZDU is understaffed • The ZDU is confined to zoonotic diseases. For other OH issues (such as AMR, food safety), separate coordination mechanism was evolved • Collaboration with environment sector is not clear • Expansion of the OH approach at the sub-national level • Inadequate funding for OH activities, strategies and the policies, especially in the animal sector • Lack of willingness to collaborate with other organisations • Lack of sustainability due to low communal or horizontal integration of issues	Republic of Kenya Zoonotic Disease Unit (2022) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4337352/ Kimani et al. (2019) Braam et al. (2023) https://link.springer.com/article/10.1186/s12889-019-6772-7
2.	National Anti-microbial Stewardship Interagency Committee (NASIC)	2017	Kenya	AMR	Ministry of Health Ministry of Agriculture, Livestock, Fisheries and Cooperatives	• Regular meetings • Eight of 47 counties have formed County Antimicrobial Stewardship Interagency Committees (CASICs)	• Collaboration and coordination with other multisectoral committee was limited • Inadequate resources for scaling-up • Weak communication and collaboration between county and national AMR governance • Several counties are not actively engaged • Challenges in data management due to internet • Connectivity issues and the interoperability of laboratory • Information management systems	Kimani et al. (2019) https://iris.who.int/bitstream/handle/10665/364530/9789240062689-eng.pdf?sequence=1

Sr. No.	Name of platform	Imple-menta-tion year	Geo-graph-ical area	Priority area	Ministries involved / Key organisations	Achievements	Challenges	Online link to study/paper
3.	ECOWAS Regional OH Coor-dination Mechanism (R-OHCM)	2017	West African states	Emerging and re-emerging diseases, zoonosis	West African Health Organization (WAHO) ECOWAS Regional Animal Health Center (RAHC) ECOWAS Directorate of Education, Culture, Science and Technology World Health Organization (WHO) World Organization for Animal Health (OIE) United States Agency for International De-velopment (USAID) – Regional Office of West Africa World Bank Group and United Nations Food and Agricultural Organization (FAO)	• Political commitment (commitment of technical and financial partners for the support, two regional policy debates held) • Adoption of regional framework • Adoption of laws and regulations • Routine meetings (outcome oriented) for strengthening coordination mechanisms at regional level • Risk assessment and vulnerability mapping in ECOWAS region • National bridging workshop was conducted • Identification of OH champions and training	• Lack of awareness about OH • High turnover of political appointees • Limited-skill OH workforce, especially in the animal and environmental health sectors, and access to quality of OH surveillance • Lack of protocols (for information-sharing) and policy guidelines • Fragmented surveillance system and no harmonised reporting system • Lack of monitoring and evaluation mechanism • Poor focus on operational research • Weak multisectoral collaboration • Lack of integrated risk analysis and sharing • Lack of funding (exclusively for ECOWAS R-OHCM)	Lokossou et al. (2021)
4.	National One Health Platform	2017	Guinea	Zoonotic diseases	Ministry of Health and Public Hygiene Ministry of Livestock and Animal Production Ministry of Environ-ment, Water, and Forests Ministry of Agriculture Ministry of Higher Education and Scientific Research Ministry of Fisheries and Maritime Economy	• Strategic Plan: Developed the 2019-2023 One Health Strategic Plan • Priority diseases identified: Focused on Ebola, Lassa fever, anthrax, avian influenza and rabies • Community initiatives: Implemented OH approaches in Guinea Forestière • Surveillance strengthened: Improved disease monitoring across sectors	• Limited funding: Insufficient resources to sustain and expand OH activities • Coordination gaps: Challenges in aligning efforts across multiple sectors and ministries • Capacity issues: Shortage of skilled personnel and technical expertise • Weak infrastructure: Inadequate laboratory and surveillance systems • Data-sharing: Limited systems for efficient data integration and exchange between sectors	https://onehealthoutlook.biomedcentral.com/articles/10.1186/s42522-019-0004-z https://www.sciencedirect.com/science/article/pii/S2352771418300466

Sr. No.	Name of platform	Imple-menta-tion year	Geo-graph-ical area	Priority area	Ministries involved / Key organisations	Achievements	Challenges	Online link to study/paper
					Ministry of Territorial Administration and Decentralization Ministry of Finance	• Capacity-building: Trained professionals in zoonotic disease management		
5.	National One Health Platform	2017	Liberia	Zoonotic diseases	Ministry of Health Ministry of Finance and Development Planning Ministry of Justice Ministry of Commerce & Industry Ministry of Education Ministry of Foreign Affairs Ministry of Information, Cultural Affairs & Tourism Ministry of Internal Affairs Ministry of Gender, Social and Children Protection Ministry of Public Works	• Strengthened disease surveillance and response, especially for Ebola, Lassa fever, and avian influenza • Developed a National One Health Strategic Plan to guide intersectoral collaboration • Identified priority zoonotic diseases: Lassa fever, anthrax, rabies and avian influenza • Organised capacity-building workshops for health, veterinary and environmental professionals • Increased public awareness campaigns about zoonotic disease prevention • Facilitated research and innovation for data-driven policy and interventions • Contributed to pandemic preparedness through scenario planning and simulations	• Funding constraints: Insufficient financial resources to sustain operations and expand programmes • Coordination gaps: Difficulties in fully integrating efforts across human, animal and environmental health sectors • Limited infrastructure: Inadequate laboratory and surveillance systems for effective zoonotic disease detection • Capacity issues: Lack of sufficient technical expertise and trained personnel across sectors	https://onehealthoutlook.biomedcentral.com/articles/10.1186/s42522-019-0004-z https://onehealthliberia.org/about-us/?utm_source=chatgpt.com
6.	National One Health Platform	2017	Sierra Leone	Zoonotic diseases	Ministry of Health and Sanitation Ministry of Agriculture and Forestry Ministry of Environment	• Developed a Governance Manual to define roles and responsibilities, ensuring effective coordination among stakeholders • Identified Priority Zoonotic Diseases, including rabies, Ebola, Lassa fever, avian influenza and anthrax for targeted interventions	• Limited funding: Insufficient financial resources to sustain operations and implement key initiatives • Weak infrastructure: Inadequate laboratory facilities and surveillance systems for detecting and responding to zoonotic diseases • Coordination gaps: Challenges in effectively integrating efforts across human, animal and environmental health sectors • Capacity issues: Shortage of skilled personnel and technical expertise to implement OH strategies effectively	https://onehealthoutlook.biomedcentral.com/articles/10.1186/s42522-019-0004-z https://onehealthbehaviors.org/wp-content/uploads/2022/09/OHP_MANUAL_SL_PostVal_NewCover_181018-2.pdf

Sr. No.	Name of platform	Imple-menta-tion year	Geo-graph-ical area	Priority area	Ministries involved / Key organisations	Achievements	Challenges	Online link to study/paper
						• Enhanced Preparedness for Outbreaks through joint simu-lations and response planning for zoonotic diseases • Strengthened Disease Surveillance Systems to integrate human, animal and environmental health data		
7.	One Health Multi-Sectoral Coordination Mechanism (OH-MCM)	2011	Rwanda	Emerging and re-emerging infectious diseases, including plant diseases, zoonotic, vector-borne diseases, food-borne diseases, AMR and other public health issues	Ministry of Health Ministry of Agriculture and Animal Resources Ministry of Environment	• Develop One Health Strategic Plan (2014-2018 and 2019-2023) • Zoonotic diseases prioritisation • Development of preparedness and response plans for three priority zoonotic diseases i.e. RVF, HPAI and rabies Capacity-building: • 528 final year undergraduate students from different disciplines and programmes were trained in OH • 204 students from different disci-plines were involved in field practi-cum activities to harness hands-on learning experiences using a multi-disciplinary collaboration	• Limited funding • Shortage of human, animal and environmental health professionals, as well as experts trained in OH • Ineffective communication strategies • Lack of accountability (which has resulted in many ministries continuing to work in silos) • No surveillance strategy • No formal positioning in government structure	https://faolex.fao.org/docs/pdf/rwa210403.pdf https://onehealthoutlook.biomedcentral.com/articles/10.1186/s42522-021-00059-2 https://www.cabidigitallibrary.org/doi/epdf/10.1079/onehealthcases.2024.0010
8.	National One Health Platform (NOHP)	2016	Uganda	Zoonotic diseases, AMR and biosecurity threats	Ministry of Health Ministry of Agriculture, Animal Industry and Fisheries Ministry of Water and Environment Uganda Wildlife Authority of the Ministry of Tourism	• Effective channel for communica-tion and resolving implementation • Government's support including funding • Prioritisation of the zoonotic diseases • Development of national OH Strategic Plan • Memorandum of understanding (MOU) among the OH sectors	• Extension of OH approach to other sectors that are not fully aware of their OH roles and responsibilities • Ineffective mainstreaming of OH plans and activities in the budgets and work plans of the respective sectors • Inadequate resource allocations (financial, human and logistical) to implement OH activities and tasks in government sectors • Unstreamlined collaboration and communication among sectors including poor personal relations among staff within the sectors, which affects communication	http://library.health.go.ug/leadership-and-governance/policy-documents/uganda-one-health-strategic-plan-2018-2022 Buregyeya et al. (2020)

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					Wildlife and Antiquities	• Terms of reference of the OH platform structures • Development of comprehensive OH communication strategy • Efforts to integrate OH in academia through the One Health Central and Eastern Africa (OHCEA) / One Health Workforce (OHWF); project rebranded to AFROHUN	• Lack of effective coordination and commitment to OH preparedness and response efforts • Lack of an agreed mechanism for sharing information across sectors and partners • Building consensus among sectors usually takes a long time	https://link.springer.com/article/10.1186/s44280-024-00057-9
9.	One Health Coordination Desk	2018	Tanza-nia	Zoonotic disease outbreaks related to human, ani-mal (wildlife and live-stock) and environ-mental health, bio-risk man-agement, AMR, food safety and security, (re) emerging health issues, noncom-municable diseases and other events of public health concern	Ministry of Health, Ministry of Livestock and Wildlife Ministry of Environment Disaster Management Department	• Sound institutional structure and capacity to prevent, detect early and respond to health events • The legally binding document concerning inter-institutional and inter-sectoral communication, collaboration and coordination in terms of MoU • OH Strategic Plan • Managing day-to-day coordination of OH activities • Convening stakeholders for planning and sharing information • Developed a resource mobili-sation strategy capable of providing adequate resources for operationalising the plan • Developed a draft for National One Health Resource Mobilization Strategy (NOHRMS)	• Naming the OH coordinating mechanism a Unit would not fit with the government structure and positioning under the Prime Minister's Office • Seconding personnel to the Unit from sector ministries was not practical and not aligned with government's formal employment procedures and guidelines • The technical working groups proposed were too broad in scope and lacking in key expertise to be functional • Conflicting interests on priority-setting among key players • Political instability	https://link.springer.com/article/10.1186/s42522-019-0003-0 https://www.pmo.go.tz/uploads/documents/sw-1677564782-National%20One%20Health%20Strategic%20Plan%202022%20-2027.pdf https://www.cabidigitallibrary.org/doi/epdf/10.1079/onehealthcases.2024.0011 https://www.cambridge.org/core/journals/research-directions-one-health/article/knowledge-gap-among-one-health-key-actors-on-multisectoral-coordination-at-national-and-subnational-levels-in-tanzania/E1B5C5DB4ACE8D9D2C6FED2CC96C7BB7

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10.	National One Health Steering Committee (NOHSC)	2016	Ethio-pia	Zoonotic diseases	MOH, MOA, EWCA, MCT and univer-sities such as Addis Ababa, Jimma and Mekelle	• Prioritisation of zoonotic diseases based on their impact on humans and livestock • The development of prevention and control working documents for prioritised zoonotic diseases • Joint disease surveillance and outbreak investigation • Prioritisation of zoonotic diseases • Capacity-building • Other OH promotions	• Poor integration among sectors in data-sharing and communication • Institutionalisation of OH • Lack of continuous advocacy among the community • Lack of financial funds from the government • Limited research fund	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9023113/
11.	National One Health Platform	2018	Mali	Disease outbreaks of pandemic potential, AMR	Ministry of Health Ministries of Livestock Ministry of Environment Ministry of Agriculture	• The platform has a National Strategic Plan • Multisectoral activities and implementation: Holding 22 monthly meetings, holding the preparatory workshop for the steering committee • Training module validation activity: National workshop to prioritise zoonoses (five priority zoonoses in Mali) • 33 focal points and deputies • Establishment of regional platforms • National Strategic Plan to fight against antimicrobial resistance • Training of trainers	• Insufficient funding for the formalisation of the platform	https://cgspace.cgiar.org/bitstream/handle/10568/129686/onehealth_westafrica.pdf?sequence https://reliefweb.int/report/mali/mali-national-action-plan-antimicrobial-resistance-review-progress-human-health-sector#:~:text=The%20Ministry%20of%20Health%20and%20Social%20Affairs%20recently%20established%20a,dedicated%20to%20AMR%20(2). https://ml.usembassy.gov/launch-of-one-health-plateform-in-mali/

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12.	National One Health Platform	2017	Sene-gal	Zoonotic disease	Ministry of Health Ministry of Livestock and Animal Production Ministry of Environment	• Regionalisation of the OH approach • Simulation exercises for nuclear, radiological, chemical and biological risks • Training/ awareness-raising kits for schools	• Strengthening the institutional framework of the High National Council for Health Security • OH, community ownership, operational research	https://cgspace.cgiar.org/bitstream/handle/10568/129686/onehealth_westafrica.pdf?sequence https://www.measureevaluation.org/resources/publications/tr-18-255/at_download/document https://www.ajol.info/index.php/jrsul/article/view/184545
13.	National One Health Platform	2020	Côte d'Ivoire	Zoonotic diseases	Ministry of Health Ministry of Animal Resources and Fisheries Ministry of Agriculture and Rural Develop-ment Ministry of Environ-ment and Sustainable Development	• Development of national reference documents: Drafting of regulatory texts • Capacity-building / existence of student club in universities / transdisciplinary research / multisectoral collaboration / prioritisation of zoonoses / joint investigations	Advocating for the: • Engagement of all stakeholders • Operationalisation of the platform / mobilisation of resources	https://cgspace.cgiar.org/bitstream/handle/10568/129686/onehealth_westafrica.pdf?sequence
14.	National One Health Platform	2014	Cam-eroon	Zoonotic diseases	Ministry of Livestock, Fisheries and Animal Husbandries Ministry of Public Health Ministry of Forest and Wildlife Ministry of Environ-ment and Protection of Nature	• Prevention and mitigation • Prioritisation of zoonotic diseases • Risk assessment • Epidemiological surveillance • Preparedness plans and procedures • Training simulation exercises	• Insufficient ownership of the OH approach by certain sectors, weak sensitisation of the private sector and civil society and insufficient resources to carry out activities to promote the approach • Sustainable financing • Not focusing on other public health issues	https://www.afro.who.int/sites/default/files/2018-02/Report%20of%20the%20One%20Health%20Technical%20and%20Ministerial%20Meeting%20--%20Dakar_.pdf https://www.woah.org/app/uploads/2023/04/jm-feussom.pdf

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								https://www.sciencedirect.com/science/article/pii/S2352771424000648 https://onehealthbehaviors.org/countries/cameroon-2/#toggle-id-2-closed
15.	National One Health Coordina-tion Mechanism (MCM)	2017	Egypt	Zoonotic diseases	Ministry of Health and Population (MoHP) Ministry of Agriculture and Land Reclamation (MoALR)	• Improve information and data-sharing, knowledge transfer and collaboration between all sectors, thereby increasing efficiency in the use of resources • Developing centres of excellence for education and training in specific areas through enhanced collaboration among colleges of veterinary medicine and human medicine • Capacity-building	• Identification of critical OH workforce shortages in all sectors and the development of solutions in collaboration with key stakeholders • Necessary infrastructure and resources • Key leadership to embrace the concept of OH, to obtain buy-in from the human, animal and environment health sectors and other relevant partners • Differences in organisational cultures and competing priorities • Lack of equitable resources • Lack of communication and advocacy plan • Lack of support from various stakeholders	Allal et al. (2019)
16.	Multisecto-ral techni-cal working group (AMR platform)	2011	Ghana	AMR	Ministry of Health Ministry of Food and Agriculture Ministry of Fisheries and Aquaculture Development Ministry of Environ-ment, Science, Technology and Innovation	AMR platform members' actions resulted in three remarkable outcomes: • (1) Maintained network of AMR champions • (2) Design and launch of a national policy on antimicrobial use resistance in Ghana (1st edition) and its accompanying NAP (2017-2021) • (3) Ghana's hosting of the second global call to action on AMR • AMR platform as a policy com-munity floated ideas and solutions on strategies to improve AMR	N/A	https://link.springer.com/article/10.1186/s42522-021-00051-w#MOESM3

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						awareness, strengthen knowledge and evidence base, reduce incidence of infection, optimise the use of antimicrobial agents and develop an economic case for sustainable investments in new medicines, diagnostic tools and other interventions		
17.	National One Health Technical Committee	2023	Nigeria	Zoonotic diseases	Ministry of Health Ministry of Agriculture and Rural Development Ministry of Environment	N/A	N/A	https://gphihr.tghn.org/news/inauguration-nigeria-national-one-health-technical-committee/ https://ncdc.gov.ng/ncdc.gov.ng/news/503/nigeria-holds-its-national-one-health-steering-committee-inaugural-meeting https://onehealthbehaviors.org/wp-content/uploads/2022/09/Nigeria_One_Health_Strategy_2019-2023.pdf
18.	National One Health Platform	2011	DR Congo	Zoonotic diseases Food security AMR	Ministry of Higher Education Ministry of Agriculture Ministry of Fisheries and Livestock Ministry of Interior, Decentralization, Security and Customary Affairs Ministry of Health, Hygiene and Prevention	• Development of National One Health Strategy (2022-2026) • Development of governance manuals and internal regulations • Developed OH training modules for in-service professionals and pre-service students • Integrated OH competencies into curricula at some universities • Established provincial OH platforms in 12 provinces	• Despite high-level recognition, practical support and funding from the government remain insufficient • Lack of ownership and reliance on external donors undermine sustainability • Leadership conflicts between ministries, particularly the Ministry of Health and the Ministry of Higher Education, create coordination challenges • Limited integration of OH activities into the national budget • High turnover of trained personnel at provincial and territorial levels disrupts continuity	https://www.sciencedirect.com/science/article/pii/S235277142400260X

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					Ministry of Primary, Secondary and Vocational Education Ministry of Media and Communication Ministry of Environment and Sustainable Development Ministry of Social Affairs Ministry of Scientific Research and Technological Innovation	• Conducted sensitisation workshops and training for provincial stakeholders • Coordinated responses to outbreaks, including Mpox and rabies • Developed national plans for rabies elimination (2022-2033) and risk communication for zoonotic diseases • Published quarterly OH newsletters to raise awareness and report activities	• Lack of adequate infrastructure and resources for data collection and sharing across human, animal and environmental health sectors • Provincial OH platforms are dependent on donor support, leaving some regions without operational platforms	
19.	National One Health Platform	2019	Burkina Faso	Zoonotic disease	Ministry of Health (MOH) Ministry of Animal Resources and Fisheries (MARF) Ministry of the Environment, Green Economy and Climate Change (MEGECC)	• Implementation of platform has improved collaboration between the different sectors, either by formalising what already existed or by creating a framework for consultation that is conducive to new interactions • Chairmanship positions of the various bodies is distributed among the different sectors and institutions	• Permanent secretariat of the OH platform within the Ministry of Health, for which zoonotic diseases are not a priority • Lack of information-sharing, through the issuing of a Strategic Plan at ministerial level and through the miss-ing development of protocols at the operational level • Lack adequate resources to function, particularly for its steering and coordination bodies. There is still no specific domestic budget dedicated to the platform's activities, to train staff from the various ministries in the approach or to enable collaborative activities in the field (e.g. joint case investigations) • Setting up of the platform was entirely financed by external donors	https://link.springer.com/article/10.1186/s12889-022-13878-3 https://iris.who.int/bitstream/handle/10665/351442/9789240040410-eng.pdf?sequence=1

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20.	National One Health Platform	2022	Niger	Zoonotic disease	Ministry of Public Health, Population and Social Affairs (MSP/P/AS) Ministry of Livestock Ministry of the Environment and the Fight against Desertification	N/A	N/A	https://onehealthbehaviors.org/wp-content/uploads/2022/09/Doc_Final_Gouv_One-Health_27_7_22-Niger.pdf https://breakthroughactionandresearch.org/learning-together-peer-learning-inspires-action-to-improve-one-health-in-niger-and-senegal/
21.	National One Health Platform	2023	Mada-gascar	Zoonotic disease	N/A	N/A	N/A	https://www.fao.org/animal-health/news-events/news/detail/madagascar-strengthens-animal-zoonotic-disease-surveillance-system-through-SET/?utm_source=chatgpt.com
22.	National One Health Platform	2023	Togo	Zoonotic disease	Ministry of Health Ministry of Environment Ministry of Agriculture	N/A	N/A	https://www.togofirst.com/fr/sante/2908-12429-le-togo-lance-la-plateforme-une-seule-sante-pour-minimiser-les-risques-lies-aux-epidemies?utm_source=chatgpt.com https://sante.gouv.tg/efficacite-et-efficience-dans-la-reponse-aux-epidemies/?utm_source=chatgpt.com

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23.	Zambia National Public Health Institute (ZNPHI)	2020	Zambia	Zoonotic disease AMR	Ministry of Health Ministry of Green Economy and Environment Ministry of Fisheries and Livestock Ministry of Information and Media Ministry of Agriculture Ministry of Local Government and Rural Development Ministry of Tourism and Arts Ministry of Water Development and Sanitation Disaster Management and Mitigation Unit (DMMU) Ministry of Home Affairs and Internal Security (Police)	• Developed National One Health Strategic Plan (2022-2026) • Has supported to detect and respond to zoonotic diseases through the OH approach by prioritising the country's top ten zoonotic diseases, including African trypanosomiasis, anthrax, and rabies, using a multisectoral OH approach • Launched the One Health Surveillance Platform for AMR. This platform aims to improve data collection, analysis and quality across laboratories and sectors, enabling the government to make data-driven decisions to combat AMR	N/A	https://www.cabidigitallibrary.org/doi/pdf/10.1079/onehealthcases.2024.0021
					Asian countries			
1.	Inter-Agency Committee on Anti-Microbial Resistance (IACMR)	2014	Philip-pines	AMR	Department of Health (lead), Department of Agriculture (Co-lead) Members: Department of Science and Technology (DOST) Department of the Interior and Local Government (DILG) Department of Trade and Industry (DTI)	• With support from the WHO-WPRO, the Philippines was able to conduct a Country Situation Analysis (CSA) on AMR and developed policies to address this problem • This partnership was further strengthened with the country being chosen in the Western Pacific Region as one of the pilot sites on the implementation of antimicrobial stewardship (AMS) programme in hospitals	• Weak collaboration between FDA and the BAI Animal Feed, Veterinary Drug and Biologicals Division on the control of veterinary drugs	https://icamr.doh.gov.ph/wp-content/uploads/2022/02/NATIONAL-ACTION-PLAN-TO-COMBAT-AMR.pdf https://www.mdpi.com/2079-6382/11/6/820 https://www.sciencedirect.com/science/article/pii/S2352771424000843

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2.	Philippine Interagency Committee on Zoonosis (PhilCZ)	2011	Philip-pines	Zoonotic diseases	Department of Health (DOH) Department of Agriculture (DA) Department of Environment and Natural Resources (DENR) Bureau of Animal Husbandry	• To develop a national strategy on prevention, control and elimination of zoonoses and establish a functional and sustainable mechanism to strengthen the animal-human interface for the effective prevention, control and elimination of zoonotic diseases	• Absence of coordination between DA and DOH on zoonotic diseases	https://www.bai.gov.ph/blog-detail?b=BAI%20Updates%20National%20Strategic%20Plan%20on%20Zoonoses https://www.sciencedirect.com/science/article/pii/S2352771424000843
3.	Standing Committee on Zoonosis ICAR and ICINR Task Force for Zoonosis	2006	India	Zoonotic diseases	Department of Animal Industry, Dairying, and Fisheries (DADF) Ministry of Health and Family Welfare (MoH&FW) Ministry of Environment, Forest and Climate Change Ministry of Science and Technology (MST) Ministry of Law and Justice Ministry of Food Processing Industries (MFPI) Agricultural and Processed Food Products Export Development Authority (APEDA) Export Inspection Council (EIC) The National Dairy Development Board (NDDB)	• Meets biannually / annually to advise on various facets of the work on zoonoses • One Health India – conference, table-top exercises • National multisectoral technical consultation ISC • Good coordination with multiple stakeholders at national level and in some states • Regular formal meetings established with many coordinating partners with terms of reference, minutes and formal reports • A number of joint programmes operating with government stakeholders	• Huge country • Diverse administrative structure of different states and different departments • Competing priorities of the government • Little coordination at state level • Unpredictable funding • Geo-climatic challenges	https://pmc.ncbi.nlm.nih.gov/articles/PMC8204840/ https://www.sciencedirect.com/science/article/pii/S2352771419300011 https://www.onehealthjournal.org/Vol.6/No.2/12.html https://link.springer.com/article/10.1186/s12889-021-11545-7 Lagayan (2020)

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					Department of Agriculture and Research and Education (DARE) Department of Agriculture Cooperation and Farmers Welfare Veterinary colleges			
4.	Intersectoral Coordina-tion Com-mittee on Antimicro-bial Re-sistance (ICCAMR)	2016	India	AMR	Ministry of Health and Family Welfare Department of Health Research Indian Council of Medical Research (ICMR) Department of Animal Husbandry, Dairying & Fisheries Department of Biotechnology CSIR CDSCO, FSSAI, AYUSH, NMC Director General of Health Services (DGHS) MoHFW Department of Animal Husbandry, Dairying & Fisheries Ministry of Food Processing Industries	• National Action Plan on AMR	• Lack of sufficient finances • Inappropriate antibiotic use owing to a number of reasons, lack of diagnostic facilities, widespread use of antibiotics in various sectors, environmental contamination because of pharmaceutical industry, agricultural and hospital waste, gaps in infection prevention and control, and difficulty in enforcing regulations	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6618210/#:~:text=The%20Indian%20NAP%20for%20AMR,a%20big%20push%20is%20needed https://www.sciencedirect.com/science/article/pii/S2213716521002228

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					Ministry of Environ-ment & Forest & Climate Change			
5.	High Level National Multi-sectoral Steering Committee (NMSC)	2017	Myan-mar	AMR	Chair: Ministry of Health and Sports Members: Ministry of Agriculture, Livestock and Irrigation Ministry of Education Ministry of Commerce Ministry of Home Affairs Ministry of Defence	• Provide the necessary political commitment and support • Strong laboratory network, existing infection control and biosecurity programmes in human and animal health sectors and a National One Health Strategy that identifies AMR as a priority	• Lack of awareness on AMR and AMU among stakeholders across the board • A significant problem of over-the-counter sales of AMAs in both human and animal sectors	https://faolex.fao.org/docs/pdf/mya202553.pdf https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065(20)30084-5/fulltext
6.	Zoonoses Technical Working Group (Z-TWG) National Avian Influenza Control Committee	2019	Cam-bodia	Zoonotic disease	Ministry of Agriculture, Forestry and Fisheries Ministry of Health	• Lab-epi training AET/CAVET	N/A	https://www.woah.org/fileadmin/Home/eng/Media_Center/docs/EN_TripartiteZoonosesGuide_webversion.pdf https://www.ghsindex.org/wp-content/uploads/2021/12/Cambodia.pdf Lagayan (2020)

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7.	AMR Technical Working Group	2016	Cam-bodia	AMR	Ministry of Agriculture, Forestry and Fisheries Ministry of Health	• AI surveillance, joint SOPs and simulation exercise • Multisectoral AMR action plan • Food Safety Policy (draft) • Joint training – risk assessment and application • National conferences – AMR, Epi • International Health Review and coordination	• Need for a higher committee above MoH and MAFF with political power to coordinate the implementation of multi-spectral action plans for AMR	Lagayan (2020) https://www.fao.org/fileadmin/user_upload/amr/docs/2017_29-30_Nov-Tripartite-AMR-meeting_Concept-Note.pdf https://www.fao.org/faolex/results/details/en/c/LEX-FAOC199420/
8.	National Steering Committee	2017	Bangla-desh	AMR	Ministries of Health and Family Welfare Ministry of Fisheries & Livestock	• Human and animal health sectors working for AMR surveillance, monitoring and evaluation	• Shortage of health workforce • High turnover dedicated workforces • Financial constraints	https://rr-asia.woah.org/wp-content/uploads/2020/03/bangladesh_nap_2017-2022.pdf https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9137577/
9.	Inter-ministerial Steering Committee on One Health	2016	Bangla-desh	Zoonotic diseases	Ministry of Health & Family Welfare (MoHFW) Ministry of Fisheries and Livestock (MoFL) Ministry of Environment and Forests (MoEF)	• International health regulation bridging workshop was conducted. Surveillance findings are reported by Diagnostic Laboratory Services to stakeholders on a regular basis to assess the impact of antimicrobial-use interventions and to inform policy-makers • Bangladesh World Rabies Day events • World One Health Day celebration • Publication of One Health newsletter	• Formal MOUs to coordinate activities with the relevant ministries or departments is still lacking • Lack of interaction or formalised meetings with stakeholders and other relevant authorities in order to implement activities • Not established joint outbreak investigation team for control of zoonotic disease	https://journals.lww.com/ohbl/citation/9900/one_health__status,_opportunities_and_challenges.17.aspx Lagayan (2020) https://onehealthbd.org/wp-content/uploads/2024/01/SFOHB-Final-Version-One-Health.pdf https://www.ghsindex.org/wp-content/uploads/2021/12/Bangladesh.pdf

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						• Scenario-based outbreak investigation using OH approach		https://onehealthbd.org/wp-content/uploads/2024/01/One-Health-Bangladesh-Constitution_Sep2017.pdf
10.	High Level Inter-Ministerial Steering Committee (IMSC)	2017	Indo-nesia	AMR	Ministry of Health Ministry of Human Development and Culture Ministry of Research and Technology and Higher Education Ministry of Education Ministry of Agriculture	N/A	N/A	https://rr-asia.woah.org/wp-content/uploads/2020/03/indonesia_national-action-plan-on-antimicrobial-resistance-indonesia-2017-2019.pdf https://www.thelancet.com/journals/lanwpc/article/PIIS2666-6065(20)30084-5/fulltext
11.	National Committee for Zoonoses Control	NA	Indo-nesia	Zoonotic diseases	Ministry of People's Welfare Ministry of Home Affairs Ministry of Health (MoH) Ministry of Agriculture Ministry of Foreign Affairs Ministry of Defence Ministry of Finance Ministry of Forestry Ministry of National Education Ministry of Research Technology	• At the central level, there seems to be quite good external coordination with the ministries responsible for health, home affairs and fisheries, in particular when it comes to zoonosis management, the AI control programme, organisation of simulation exercises or contingency plans	• Stakeholder meetings under some committees needs to be better formalised with procedures laid down and minutes of meetings agreed • Multisectoral coordination mechanism should further develop and extend to other relevant topics such as food safety, laboratory diagnosis, etc. Contingency plans should also be reviewed	Lagayan (2020) https://pmc.ncbi.nlm.nih.gov/articles/PMC10919696/

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					Ministry of Communi-cation and Informa-tion Technology Ministry of Transportation Ministry of Environment Ministry of National Dev. Planning Ministry for Women Empowerment and Child Protection Ministry of Culture and Tourism Ministry of Environ-ment and Forestry Army, State Secretary, Indonesian Red Cross			
12.	Drug Technical Advisory Committee (DTAC)	2018	Bhutan	AMR	Ministry of Health Ministry of Agriculture and Forests	N/A	• Due to limited capacity and the complexity of AMR, the activities have not been carried out in a systematic manner • There is no lead / focal agency / programme at the MoH or MoAF for systematic planning and budgeting for AMR activities. Multisectoral collaboration is weak and requires further harmonisation	Royal Government of Bhutan (2018)
13.	One Health Core Group/ Secretariat and the National OH Technical Committee (NOHTC)	NA	Bhutan	Zoonotic diseases	Ministry of Health Department of Medi-cal Services (DMS) Department of Livestock (DoL) under Ministry of Health and Ministry of Agriculture & Forests (MOAF) Department of Public Health (DoPH)	• Both AMR and zoonoses are managed through OH approach under the same institutional arrangement or coordination mechanism • Any zoonotic events are investi-gated jointly using OH approach • Research on zoonoses is con-ducted in the country that provides scientific evidence to guide policy decision	• No formal linkages in reporting of zoonotic / foodborne diseases among BAFRA and MoH • Sustainable funding support to build OH capacity and conduct collaborative research at animal-human-environment interface is not yet available	Lagayan (2020)

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					Bhutan Agriculture and Food Regulatory Authority (BAFRA) Drug Regulatory Authority (DRA) National Environment Commission (NEC) Ministry of Home and Cultural Affairs (MOHCA) Forestry Department	• Capacity-building and simulation exercises are conducted		
14.	AMR Multi-sectoral Steering Committee (AMRCSC)	N/A	Nepal	AMR	Veterinary Public Health Office (VPHO) and Department of Food Technology and Quality Control (DFTQC) on food safety policy to avoid overlaps and gaps Central Animal Quarantine Office (CAQO) with custom services	N/A	• Poor organisational structure to support OH, absence of a legal framework to implement OH, poor coordination among different governmental agencies, insufficient technical expertise, poor data-sharing mechanism across sectors, limited budget and poor understanding at political level	https://pubmed.ncbi.nlm.nih.gov/31485475/ https://rr-asia.woah.org/wp-content/uploads/2020/03/nepal_national-antimicrobial-resistance-containment-action-plan_nepal.pdf Lagayan (2020)
15.	Multisec-toral coordi-nation for HPAI control established at central, regional and district levels	N/A	Nepal	HPAI	Veterinary Public Health Office (VPHO) and Department of Food Technology and Quality Control (DFTQC) on food safety policy to avoid overlaps and gaps Central Animal Quarantine Office (CAQO) with custom services	• Preparedness and response readiness tested through joint table top exercise by animal and human health on influenza priority zoonotic diseases identi-fied by Nepal planned for review in the new development context • Response interventions under-taken jointly by animal and human health for timely containment through joint surveillance and actions	• Political and sectoral commitment on OH issues • Inadequate contingency plans to address OH emergencies • Diseases on wildlife not much studied • Inadequate human, physical and financial resources to implement OH measures • The functioning of the committee mostly depends on external support • No institutional arrangement at provincial and local government level	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6715885/ Lagayan (2020)

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					Veterinary Drug Administration and Quality Control Office (VDAQCO) with Department of Drug Administration (DDA) of the Ministry of Health for Veterinary Drugs Veterinary Epi-demiology Centre (VEC) with Ministry of Health for zoonoses	• Dedicated fund secured by Nepal to spruce up the laboratory of both animal and human health		
16.	National AMR Steering Committee	2019	Papua New Guinea	AMR	Ministry for Health Ministry of Agriculture and Livestock Ministry of Conservation & Environment Protection Authority	N/A	• Systems of government and capacity • Although some mechanisms are in place to monitor, collect information and respond to the threat of AMR, generally the systems need improvement and support to better deal with the AMR issue in the country	https://cdn.who.int/media/docs/default-source/antimicrobial-resistance/amr-spc-npm/nap-library/png-action-plan-on-amr-090919_signed.pdf?sfvrsn=1dd11db2_1&download=true
17.	National Steering Committee	2016	Vietnam	AMR	Ministry of Health Ministry of Agriculture Ministry of Environment Ministry of Trade	• In Vietnam, it is quite common to set up a National Steering Committee to support inter-sectoral collaboration in the event of a crisis that demands an emergency response, like in the case of highly pathogenic avian influenza (HPAI) • Some collaborative mechanisms have been established and are framed by regulatory documents that precisely stipulate the roles and responsibilities of the two sectors	• Inappropriate legal instruments and regulations • Conflicts of interest • Under-staffed inspection bodies • Very health-crisis driven	https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-018-6022-4#:~:text=In%202016%2C%20a%20National%20Steering,and%20the%20Ministry%20of%20Trade https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8668232 https://link.springer.com/article/10.1186/s13756-024-01364-x

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18.	Joint Pandemic and Avian Influenza Steering Committee	2004	Vietnam	Avian influenza	Ministry of Health Ministry of Agriculture and Rural Development Ministry of Industry and Trade Ministry of Natural Resources and Environment	• Implemented joint Strategic Plans, such as the Vietnam Integrated National Operational Program on Avian and Human Influenza (2006-2010) • Since 2006, there are clear improvements with collaboration between DAH and other relevant authorities, especially with HPAI	• Such improvements in external coordination do not seem to be sustained by evidence of formal mechanisms and regular implementation (2010) • Scarce research dedicated to environmental health and forestry protection in Vietnam	Lagayan (2020) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8668232/
19.	National Multisec-toral Committee (NMC) for Antimicro-bial resistance (AMR)	2017	Timor-Leste	AMR	N/A	N/A	N/A	https://cdn.who.int/media/docs/default-source/antimicrobial-resistance/amr-spc-npm/nap-library/national-action-plan-on-antimicrobial-resistance-timor-leste-2017-2020.pdf?sfvrsn=7d9c62a5_1&download=true#:~:text=National%20Action%20Plan%20on%20AMR%20(2017%20%E2%80%93%202020)&text=The%20goal%20of%20the%20GAP,to%20all%20who%20need%20them.%E2%80%9D
20.	Joint Steering Committee of the Health and Livestock Ministries for HPAI	2005	Sri Lanka	Avian and pandemic influenza	Ministry of Health Medical Research Institute and the Communication and Health Promotion Department Health Education Bureau Department of Animal Production and	• National Influenza Pandemic Preparedness Plan (NIPPP) • Rabies prevention and control coordination • Joint external evaluation conducted in 2017 • National Action Plan for Health Security	• The DAPH has no formal link with the Department of Fisheries, Department of Wildlife in the Ministry of Environment and Natural Resources for fish or wildlife surveillance	Lagayan (2020) http://www.woah.org/fileadmin/database/ASIA/Sri%20Lanka%20-%20Terrestrial/Terrestrial%20disease%20specific/Avian%20influenza%20section%201.pdf

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					Health (DAPH) in the Ministry of Agriculture			
21.	National Advisory Committee on Anti-microbial Resistance (NAC-AMR) under 'One Health' concept	2017	Sri Lanka	AMR	Ministry of Health Medical Research Institute and the Communication and Health Promotion Department Health Education Bureau Department of Animal Production and Health (DAPH) in the Ministry of Agriculture	• Finalisation of the National Strategic Plan	• The DAPH has no formal link with the Department of Fisheries, Department of Wildlife in the Ministry of Environment and Natural Resources for fish or wildlife surveillance	https://www.who.int/publications/m/item/sri-lanka-national-strategic-plan-for-combating-antimicrobial-resistance-in-sri-lanka-2017-2022 Lagayan (2020)
22.	One Health Hub	2017	Pakistan	Zoonotic diseases AMR	Ministry of National Health Services, Regulations, and Coordination Ministry of National Food Security and Research Ministry of Climate Change Ministry of Science and Technology	• Collaborated with the US Centers for Disease Control (CDC) and US Department of Agriculture to create a framework for prioritising endemic and emerging zoonotic diseases • Established working groups addressing AMR, influenza and laboratory capacity • Engaged stakeholders across sectors, with ongoing efforts to improve the inclusion of animal and environmental health • Strengthened laboratory capacities and provided training to veterinary officers through international collaborations • Conducted prioritisation exercises to focus resources and efforts on critical zoonotic diseases • Facilitated the implementation of global projects, such as rabies elimination, at the provincial level with WHO support	• Limited collaboration and coordination among human, animal and environmental health sectors • Absence of a formalised structure to ensure sustained multisectoral engagement • Inadequate funding to support OH initiatives and long-term projects • Limited human resources, particularly skilled professionals trained in the OH approach • Greater emphasis on human health, with underre-presentation of animal and environmental health sectors • Challenges in prioritising environmental health issues alongside zoonotic disease management • Limited laboratory capacities and surveillance systems for zoonotic diseases and AMR • Fragmented data systems across sectors impede effective surveillance and risk assessment • Lack of standardised mechanisms for sharing information between ministries and agencies	https://www.cabidigitallibrary.org/doi/epdf/10.1079/cabionehealth.2023.0015 https://www.tandfonline.com/doi/full/10.3402/iee.v6.33842#d1e521