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One health approach in Nepal: review of policy perspectives

Sudarshan Paudel[1], Deepak Paudel[2], Anu Devkota[3], Dipendra Jaishi[3], Laxman Dhakal[3], Jitendra Kandel[3], Guenter Froeschl[4]

[1]Assoc. Prof., [3]MPH Student, School of Public Health, Patan Academy of Health Sciences, Lalitpur, Nepal; [2]Public Health Professional, Nepal; [4]Scientific Director & Head of the Teaching & Training Unit, Center for International Health, Ludwig-Maximilians-Universität, Munich, Germany

Abstract

The One Health (OH) approach integrates human, animal, and environmental health to address complex public health risks. In Nepal, its importance is growing due to an increasing incidence of zoonotic diseases, antimicrobial resistance, rapid urbanization, and climate change. The National Health Policy 2019, One Health Strategy 2019, and Public Health Service Act 2018 provide a foundation for enhanced coordination, surveillance, and inter-sectoral collaboration. However, fragmented governance, resource constraints, poor data integration, and limited local capacity hinder desired progress. Furthermore, low public awareness and weak interdisciplinary policymaking pose additional challenges. Strengthening Nepal's OH framework requires interdisciplinary commitments, stronger institutional linkages, robust surveillance, responsive health teams, and active community networks. Policy coherence, capacity-building, and inclusive engagement are essential for operationalizing OH and ensuring national and global health security. By aligning efforts across sectors, Nepal can harness OH's potential to safeguard public health and build resilient systems against emerging health threats.

Keywords: Health System; Nepal; National Policy; One Health Approach

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Correspondence: Deepak Paudel, Nepal Public Health Association, Lalitpur, Nepal
Email: deepak.paudel@lrz.uni-muenchen.de

Introduction

One Health (OH) is an approach that recognizes the interconnection between the health of humans, animals, and the environment. Its importance has grown significantly in recent years due to increasing interactions between people, animals, and ecosystems driven by factors such as population growth, urban expansion, climate change, and globalization.[1] Approximately 75% of recently emerging infectious diseases affecting humans are of animal origin, and nearly 60% of all human pathogens are zoonotic.[2] The OH approach provides a collaborative, cost-effective, and sustainable framework for addressing these complex challenges.[3] It emphasizes communication and cooperation among human health, animal health, and environmental sectors to achieve optimal health outcomes.[4] Nepal has undergone substantial structural changes due to federalization since 2015, and efforts to promote OH have been led mainly by the federal government with support from international organizations and donor-funded projects. Projects such as the Avian Influenza Control Project and the Zoonotic Disease Control Project, along with initiatives addressing Anti-microbial resistant (AMR), highlight Nepal's gradual integration of the OH concept. With Nepal's evolving federalization, increased knowledge sharing by development partners and researchers, rising climate-induced challenges, and the growing threat of antimicrobial resistance, several OH policies and plans have been prepared and updated. While these efforts have drawn attention to OH, the concept remains insufficiently internalized and streamlined into interdisciplinary practice.

Despite various initiatives, Nepal still lacks an effective institutional framework to implement and sustain the OH approach at both national and sub-national levels.[5]

This opinion paper aims to provide an overview of the OH approach, highlight its importance, review current policies in Nepal, and explore the opportunities and challenges in implementing this approach at national and sub-national levels.

OH-related documents from government websites (www.mohp.gov.np, www.mofe.gov.np, www.moald.gov.np) were systematically searched, downloaded, and reviewed. Peer-reviewed literature was retrieved from databases (PubMed, ScienceDirect), and workshop materials and conference presentations in Nepal on OH were collected. Officials and organizations engaged in OH were personally consulted to enrich insights. All resources were reviewed by co-authors and critically appraised using a Strengths, Weaknesses, Opportunities, and Threats matrix at Patan Academy of Health Sciences. This collaborative appraisal informed the development of the opinion paper and subsequently peer-reviewed.

One Health in Nepal's Policies

Addressing these multifaceted issues affecting the health of humans, animals, and the environment necessitates a shared understanding and coordinated action. In response, the Quadripartite United Nations agencies; i.e. World Health Organization (WHO), Food and Agriculture Organization (FAO), United Nations Environment Programme (UNEP), and the World Organization for Animal Health (WOAH) have come together to develop the One Health Joint Plan of Action 2022–2026 to guide collective efforts in tackling these global health threats.[6] In accordance with Article 51(h) of the Constitution of Nepal, which mandates the fulfilment of citizens' basic needs, and in alignment with global health commitments, the Government of Nepal formulated the *OH Strategy 2076 (2019)*.[7] This strategy acknowledges

Importance of One Health

- **Addresses Zoonotic Diseases:** Approximately 75% of newly emerging human infectious diseases originate from animals, making OH critical for early detection, control, and prevention of zoonotic outbreaks.[2,4]
- **Targets Environmental Disruptions:** OH aims to address and mitigate environmental changes like deforestation, climate change, and interactions among humans, animals, and ecosystems, raising the risk of disease transmission.[1]
- **Facilitates Actions to Controls Antimicrobial Resistance (AMR):** The spread of antimicrobial-resistant organisms across people, animals, food, and the environment poses a serious health threat. OH facilitates coordinated actions to tackle AMR effectively.[1,3]
- **Improves Disease Surveillance and Preparedness:** By fostering collaboration across human, animal, and environmental sectors, OH strengthens national and global health security, especially for emerging threats like severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), and Highly Pathogenic Avian Influenza (HPAI).[1,3]
- **Promotes Cost-Effective and Sustainable Solutions:** Particularly in resource-limited countries like Nepal, OH offers a practical and financially viable framework to enhance health outcomes while supporting efficient use of limited shared resources.[3]
- **Enhances Public Health Capacity:** Projects like the Avian Influenza Control Project and AMR surveillance initiatives in Nepal show how adopting an OH approach improves coordination among sectors and builds long-term capacity.[5]
- **Encourages Multisectoral Collaboration:** OH emphasizes the need for cooperation among health professionals, veterinarians, ecologists, and policymakers, making it a unifying approach for complex health challenges.[1,4]

the interconnection between human health, animal health, and environmental health, recognizing that these domains share common risks and determinants requiring integrated management to optimize public health outcomes. The strategy is jointly implemented by the Ministry of Health and Population, the Ministry of Agriculture and Livestock Development, and the Ministry of Forests and Environment. It delineates five key strategic action areas: (1) establishment of advisory and technical committees to promote coordinated governance through collaboration among stakeholders at the local, provincial, and federal levels; (2) integration of disease surveillance and laboratory services, with a focus on risk-based, continuous monitoring of wildlife, plant systems, food chains, and emerging and re-emerging communicable and zoonotic diseases; (3) capacity building through targeted skill development interventions, based on the identification of critical gaps among stakeholders; (4) enhancement of preparedness and response mechanisms via the development of contingency plans, sector-specific emergency response strategies, resource mobilization frameworks, and simulation exercises; and (5) strengthening of communication and advocacy efforts through the development and dissemination of effective information, education, and communication (IEC) materials to support the implementation of OH initiatives.[7]

Similarly, the *National Health Policy (NHP) 2076 (2019)* implicitly expresses the crux of OH approaches by incorporating the deep interconnection between human, animal, and environmental health. The policy obviously commits to strengthening intra- and inter-sectoral coordination to prevent and control communicable diseases. It promotes an integrated preparedness and response system to tackle not only communicable, vector-borne, and animal-borne diseases but also health issues arising from climate change, natural disasters, and environmental degradation. It recognizes the rise of AMR and emphasizes the development of a one-door health policy that assists in the control and management of communicable diseases and environmental pollution such as air, sound and water pollution.

In the face of rapid urbanization (17.03% in 2011 to 66.08% in 2021) and increased internal and external migration, the policy underscores the need to proactively managing challenges related to public health. It also supports inclusive partnership efforts among governmental agencies, non-governmental organizations and the private sector to enhance surveillance systems like climate sensitive diseases surveillance, prevention and response capacity.[8] Policy statements remain essential for guiding program managers in designing annual activities and allocating resources. They provide strategic direction to address critical OH challenges, including priority zoonotic disease control and outbreak investigation, ensuring coordinated, evidence-based responses that safeguard public health and strengthen system resilience.

To operationalize the OH Strategy, Nepal developed the *National Action Plan on AMR (2024–2028)*. The plan seeks to strengthen coordination among stakeholders to contain antimicrobial resistance, improve patient management, reduce morbidity and mortality, and advance progress toward the SDGs and Universal Health Coverage. Key priorities include raising awareness through communication, education, and training; expanding evidence through surveillance and research; reducing infections via effective prevention and control; and optimizing antimicrobial use across human, animal, and food sectors. It also emphasizes securing sustainable resources and fostering investment in research and innovation to ensure long-term containment of AMR.

The *Public Health Service Act, 2075 (2018)* of Nepal, while not explicitly referencing the “One Health” approach, incorporates several principles that align with the integrated concept of OH. Section 2(f) defines “Risk Zones” to include biological, chemical, climate change-related, and geographic factors that may adversely affect human health, reflecting a core environmental health concern under the OH framework. Different sections in the act address the quality standards for consumable goods such as food, water, and meat—key for zoonotic disease prevention and food safety, empowers the government to regulate and reduce the impact of air, water, noise, and visibility pollution, thus protecting environmental and human health. Similarly, section 41 outlines sanitation and waste management standards, requiring health institutions to separate hazardous and non-hazardous waste and ensure safe drinking water. Provisions related to promotion of public health-friendly infrastructure, including pedestrian paths and cycle lanes, considering urban health design and mandating Public Health Impact Assessments (PHIAs) for industrial and urban development projects and holds developers accountable for damage to public health, environment, and livestock. The act also advocates for multi-sectoral coordination through a National Public Health Committee, which encompasses representatives from key ministries (i.e. Ministry of Health and Population, Ministry of Finance, Ministry of Industry, Ministry of Agriculture, Ministry of Water Supply and Sanitation, Ministry of Home Affairs, Ministry of Women Children and Senior Citizen, Ministry of Education, Ministry of Forest and Environment, Ministry of Labor Employment and Social Security, Ministry of Physical Infrastructure and Transport) and is assigned with task to integrate

health into various policy domains and promote cross-sector collaboration and alignment of public health goals with environmental protection, agriculture, and infrastructure planning.[9] Nepal has prepared several cross-cutting national policies, including the Local Government Operation Act 2074 (2017), Urban Planning and Development Act 2072 (2015), National Climate Change Policy 2076 (2019), and the Disaster Risk Reduction and Management Act 2074 (2017), alongside policies on biodiversity, food safety, and nutrition. While these frameworks highlight important linkages to OH, they often lack intersectoral coordination and coherent mechanisms to unite stakeholders. Consequently, aspirations remain unfulfilled, limiting the translation of policy intent into effective OH action.

Opportunities to Advance the One Health Approach

Nepal has several promising opportunities to implement the OH approach as outlined in the One Health Strategy, the Constitution of Nepal, the National Health Policy and the Public Health Service Act. Expanding and institutionalizing the current advisory and technical committees at the local level presents a significant opportunity to strengthen policy formulation and the implementation of OH activities at the grassroot level. Nepal's federal mechanism enables diverse stakeholders to unite under the umbrella of local government, fostering collaboration and coherence. This structure offers immense potential to break entrenched silos and promote integrated, interdisciplinary approaches for addressing OH challenges collectively. By leveraging this opportunity, local governments could transform fragmented efforts into coordinated action, advancing resilience and equity. The health sector has already developed a disease surveillance mechanism namely, the Early Warning and Reporting System (EWARS) to monitor outbreak-prone diseases such as malaria, kala-azar, dengue, acute gastroenteritis, cholera, severe acute respiratory infection (SARI), and other epidemic-prone diseases and syndromes including enteric fever, leptospirosis, rabies, and chikungunya. Broadening the scope of this surveillance system to include additional zoonotic diseases would further enhance the OH approach.[10] In alignment with the Public Health Service Act, the Government of Nepal has identified 52 communicable diseases of predominantly zoonotic origin that contribute significantly to morbidity and mortality during outbreaks.[11] Additionally, the establishment and operationalization of specialized structures such as Rapid Response Teams (RRTs) and Emergency Medical Teams (EMTs) offer critical institutional support for timely outbreak detection and response, further reinforcing the OH framework.

Inclusion of OH in NHP reflects the strong political commitment and creates a supportive environment for multi-sectoral collaboration. Committees representing multiple ministries provide a platform for integrated action across sectors. In addition, growing partnerships with international organization like WHO and FAO offers valuable technical and financial support. Increasing investment in climate sensitive diseases surveillance, adoption of digital health tools (e.g. Geographic Information Systems mapping), enhance the country ability to monitor and respond zoonotic and environmental health threats. Nepal's extensive community-based health networks and raising awareness around AMR, climate change and environmental pollution further strengthen the potential for grassroots implementation of OH initiatives.[12] The Public Health Service Act demonstrates Nepal's commitment to a multi-disciplinary approach to public health, incorporating environmental protection, food safety, occupational health, and inter-sectoral governance, which are the essential pillars of the OH concept. The Act implicitly supports OH through integrated health services, disease surveillance, and environmental protections but it could be strengthened by explicitly linking human, animal, and environmental health frameworks. Human animal interface health issues like rabies, anthrax, avian influenza, food born outbreaks and increasing AMR are of immense importance and OH in Nepal can contribute significantly as these issues demand multi- disciplinary approach for effective containment. Human pathogenic avian influenza, rabies and AMR have utilized the platform for OH in Nepal.[13] There is an opportunity to amend existing legislation, such as the Public Health Service Act, to strengthen environmental monitoring and livestock health coordination. Likewise, revisions to the Civil Service Bill could institutionalize roles and positions dedicated to OH, ensuring its approaches are prominently reflected in key policy documents and upcoming legislative amendments.

Challenges to Advance the One Health Approach

Despite notable progress, several challenges hinder the effective implementation of the OH strategy in Nepal. First, fragmented governance system and historically siloed operations across ministries results limited inter-sectoral collaboration among human health, animal health, and environmental sectors. Poor inter-ministerial coordination limits data sharing, joint investigation, and integrated surveillance. Second, financial and human resource constraints impede the development of sustainable OH platforms, particularly at the local level where technical capacity is often limited. Third, the current disease surveillance systems are predominantly focused on human health, with limited integration of

animal and environmental health data. This restricts the early detection of zoonotic threats and delays timely response measures.

Fourth, initiatives such as OH remain reliant on external funding, and constraints or cuts in these resources pose significant barriers to sustaining and scaling integrated, long-term health programs.. Moreover, monitoring systems spanning human, animal, and ecological areas are inadequately integrated, lessening prompt disease identification and data dissemination. Fifth, lack of multidisciplinary experts, especially in veterinary public health and environmental epidemiology, further restricts cross-sectoral capability. Also, quick urbanization and elevated rates of migration, both domestic and international, generate public health strains and heighten susceptibility to disease outbreaks. Sixth, Environmental deterioration, weak implementation of pollution control and land use regulations, intensifies risks at the human-animal-environment nexus. Additionally, gaps in policy implementation, inadequate laboratory capacity for zoonotic disease diagnosis, and limited public awareness about the OH concept further exacerbate these challenges. Finally, minimal public awareness of OH concept curtails community involvement and local leadership. Confronting these challenges while utilizing current opportunities will be vital for Nepal to achieve its OH vision and safeguard public health amid an evolving environment. Addressing these challenges and barriers is essential for building a resilient and comprehensive OH framework in Nepal.

Conclusion

Effective implementation of the One Health Strategy is increasingly crucial for Nepal as the intersection of human, animal, and environmental health keeps putting the nation at greater risk from zoonotic infections, AMR, climate-sensitive diseases, and rapid and unplanned urbanization. Policy-level commitment has been expressed through the National Health Policy, One Health Strategy, and Public Health Service Act, however, facilitating multi-sectoral collaboration and strengthening coordinated surveillance of diseases remain crucial. Nepal's efforts to strengthen an OH platforms are challenged by evolving federalized government structures with unclear roles and responsibilities, inadequate integration of human, animal, and environmental health systems, limited funding, and a shortage of interdisciplinary practitioners. Inadequate public awareness further constrains adoption of OH approach. Despite these challenges, Nepal has immense opportunities to advance OH by institutionalizing coordination mechanisms, enhancing local capacity, implementing coordinated digital surveillance measures, and employing established community health networks. Foreign aid and technical assistance can also play a vital role in bolstering the system. To build sustainable OH models, Nepal must enhance interdisciplinary collaboration, accountability, and engaging communities in health governance. By overcoming these challenges and capitalizing on available opportunities, Nepal has potential to implement the OH approach effectively.

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Conflict of Interest

None

Author Contribution

SP and DP conceptualized the study, provided key content and guidance for manuscript preparation; AD, DJ, JK, and LD prepared the first draft of the manuscript; DP, GF and SP reviewed and edited the manuscript. All authors read and approved of the final manuscript.

References

1. United States Centers for Disease Control and Prevention. About One Health | One Health | [Accessed on 2025 May 10]. Full Text
2. The United Republic of Tanzania. National One Health Strategic Plan 2022-2027. 2022. [Accessed on 2025 May 10]. Full Text
3. Khatiwada A, Karna A, Bhat N, Deo S. One Health as a concept. Nepal Journal of Health Sciences. Jan-June 2021; 1(1)73-74. [Accessed on 2025 May 10]. Full Text
4. World Health Organization. One health [Internet]. [cited 2025 May 10]. Full Text
5. Acharya KP, Karki S, Shrestha K, Kaphle K. One health approach in Nepal: Scope, opportunities and challenges. One Health. 2019 Dec 1;8. Full Text
6. United Nations Environment Programme. One Health Joint Plan of Action (2022 - 2026) | UNEP - [Accessed on 2025 May 10] Full Text
7. Government of Nepal, Ministry of Agriculture and Livestock Development. One Health Strategy 2076 Full Text
8. Government of Nepal, Ministry of Health and Population. National Health Policy 2074 (2019). Department of Health Services, MoHP, Nepal. 2019;(3). Full Text
9. Nepal Law Commission. The Public Health Service Act, 2075 (2018). 2019;2075(11):1–24. Full Text
10. Ministry of Health and Population, Epidemiology and Disease Control Division. Surveillance of Communicable Disease Program [Internet]. [cited 2025 May 10]. Full Text

11. Ministry of Health and Population. Epidemiology and Disease Control Division. List of notifiable infectious diseases [Internet]. [cited 2025 May 10]. Full Text
12. Thapa R, Bam K, Tiwari P, Sinha TK, Dahal S. Implementing Federalism in the Health System of Nepal: Opportunities and Challenges. Int J Health Policy Manag. 2019 Apr 1;8(4):195-198. DOI
13. World Health Organization for Animal Health. One Health: As a Concept. One Health. 2000;(June):1. Full Text