EMPHNET
The Eastern Mediterranean Public Health Network

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INSIGHTS

Towards Resilient One Health Systems:

Integrating Development, Prevention, and Pandemic Preparedness

1. Background and Global Context

1.1 What is One Health?

One Health is an integrated approach that aims to optimize health outcomes by recognizing the interdependence between humans, animals, and the environment. It emphasizes that the health of people, domestic and wild animals, plants, and ecosystems are closely interconnected. Through interdisciplinary collaboration, the One Health approach addresses complex health challenges such as emerging zoonotic diseases, antimicrobial resistance (AMR), food safety and climate change. It also supports coordinated efforts in disease prevention, surveillance, and response, contributing to improved global health security.

The growing global impact of these interconnected threats has increased attention on the One Health approach. Zoonotic diseases, account for approximately 60% of known human infectious diseases and 75% of emerging infections, highlight the close links between human, animal, and environmental health. Factors such as globalization, urbanization, and environmental changes have accelerated the spread of these diseases, placing a significant burden on health systems worldwide.

Climate change further intensifies these risks by altering ecosystems, shifting disease vectors, and worsening the spread of infectious diseases, with evidence showing that more than half of human infectious diseases are aggravated by climatic hazards. At the same time, AMR has emerged as a critical global crisis, directly causing an estimated 1.2 million deaths in 2019 and being associated with approximately 4.95 million deaths overall, driven by the misuse of antimicrobials across human, animal, and environmental sectors.

Together, these overlapping challenges demonstrate that no single discipline can effectively address them alone, reinforcing the importance of the One Health approach as a collaborative, multidisciplinary framework to prevent and manage health threats at the human–animal–environment interface.

1.2 Evolution of One Health in Global Health Security

The majority of emerging infectious diseases originate in animals, highlighting the need for surveillance beyond traditional, disease-specific systems. As novel outbreaks become more frequent, early detection of unknown threats before they reach humans is essential. Strengthening early warning systems at the human–animal–environment interface is therefore critical for pandemic preparedness.

Advances during the COVID-19 pandemic have expanded global genomic sequencing capacity, enabling more integrated surveillance for "Disease X." This shift requires moving toward flexible, agnostic tools such as metagenomic sequencing. When combined with environmental and animal monitoring, these approaches can improve early detection of emerging pathogens.

Zoonotic spillover risks are rising due to climate change, urbanization, land-use change, and global travel, which reshape interactions between humans, animals, and ecosystems. Integrating ecological data into surveillance systems can help identify high-risk hotspots and support targeted interventions.

The One Health approach addresses these challenges by promoting interdisciplinary collaboration. Originating from Schwabe's "One Medicine" concept in the 1960s, it evolved through frameworks like the Manhattan (2004) and Berlin (2019) Principles. Since 2005, One Health has been recognized as a collaborative approach that integrates human, animal, and environmental health across space and time.

1.3 Key Global Frameworks and Commitments

Global frameworks have been central to advancing the One Health approach by promoting collaboration across human, animal, and environmental sectors. Key organizations including the Wrld Health Organization, Food and Agriculture Organization of the United Nations, and World Organisation for Animal Health, later joined by the United Nations Environment Programme have formalized this through the Quadripartite partnership.

Initiatives like the One Health Joint Plan of Action (2022–2026) and monitoring tools such as IHR and JEE support coordinated implementation and capacity assessment. Broader frameworks, including the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction, reinforce the link between health, environment, and resilience.

> ***Together, these efforts reflect growing global commitment to One Health, despite ongoing challenges in implementation and measurement.***

1.4 The Shift: From Response to Prevention

The COVID-19 pandemic exposed major global vulnerabilities, highlighting the limits of reactive, response-based approaches and the need to prioritize prevention. Beyond its health impacts, the crisis caused severe economic disruption, deepened inequalities, and revealed that many systems were unprepared for large-scale shocks, underscoring the importance of resilience.

The One Health approach supports a proactive strategy by addressing the root causes of disease emergence at the human–animal–environment interface. Through integrated surveillance, cross-sector collaboration, and inclusion of environmental and socio-economic drivers, it enables earlier detection and mitigation of threats such as zoonotic diseases. Prevention is also more cost-effective, with estimated global benefits of at least US$37 billion annually, compared to costs of less than 10% of that amount.

A key driver of this shift is the One Health High-Level Expert Panel, established in 2021 to guide the Quadripartite. It has defined core principles, such as equity and transdisciplinarity and, through its 2022 Theory of Change, promotes integrated, multisectoral action to strengthen prevention, preparedness, and response. These priorities are reflected in the One Health Joint Plan of Action.

Overall, shifting from reactive responses to prevention is essential for reducing pandemic risk and strengthening global health security. One Health offers added value through improved health outcomes, greater resilience, cost efficiency, and environmental sustainability, though demonstrating its measurable impact remains critical.

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2. Relevance to the Eastern Mediterranean Region (EMR)

2.1 Regional Risk Profile

The Eastern Mediterranean Region (EMR) faces a high and complex burden of public health risks driven by interactions between humans, animals, and the environment. Rapid population growth, urbanization, climate change, environmental degradation, and global mobility have increased the region's vulnerability to infectious diseases while placing significant strain on health systems.

Zoonotic and emerging diseases are a major concern, reported in 18 out of 22 countries over the past two decades. Major outbreaks including Middle East Respiratory Syndrome Coronavirus (MERS-CoV), dengue, cholera, and COVID-19 reflect ongoing transmission linked to human–animal contact, agricultural expansion, and cross-border movement, with endemic zoonoses and foodborne pathogens contributing to recurrent outbreaks.

Climate change is intensifying risks, with the region warming at nearly twice the global average, driving extreme weather, water scarcity, and shifting patterns of vector-, water-, and foodborne diseases.

These challenges are compounded by fragile and conflict-affected settings, with 41% of countries in protracted crises, over 100 million people requiring humanitarian assistance, and 18.7 million internally displaced persons, weakening health systems, disrupt surveillance, and increasing vulnerability to disease outbreaks.

Antimicrobial resistance (AMR) is an escalating threat, causing an estimated 115,000 deaths in 2019, with high resistance levels among key pathogens. Foodborne diseases also remain significant, affecting over 100 million people annually and causing around 40,000 deaths, particularly among children under five.

The EMR faces converging, high-impact public health risks, zoonotic disease outbreaks, climate-sensitive health threats, large-scale humanitarian crises, antimicrobial resistance, and food safety challenges, that place substantial pressure on health systems and underscore the need for integrated, multisectoral approaches such as the One Health framework to strengthen prevention, preparedness, and response.

2.2 Best Practices and Existing One Health Implementations in the EMR

The EMR has shown growing commitment to implementing the One Health approach through regional frameworks, coordination mechanisms, and national initiatives. This reflects increasing recognition of the need for integrated, multisectoral responses to complex health threats.

At the regional level, political support has been key. Commitments from the FAO Regional Conference and the 69th EMR Regional Committee led to the endorsement of a Regional One Health Framework and the establishment of the Regional One Health Quadripartite Coordination Mechanism in 2022, along with subsequent meetings, aligned regional efforts with global strategies and strengthen country capacities.

Global frameworks such as the One Health Joint Plan of Action (2022–2026) have guided implementation by promoting coordinated action on zoonotic diseases, food safety, AMR, and environmental health, while strengthening surveillance and early warning systems. Progress is also evident in targeted initiatives, including the Muscat Manifesto on AMR and efforts to build climate-resilient health systems.

However, implementation of these efforts varies across the region. High-income countries such as Qatar and Saudi Arabia tend to demonstrate more advanced, technically driven approaches, supported by stronger institutional capacity, specialized tools, and well-established coordination mechanisms. Middle-income countries, including Jordan, Egypt, and Pakistan, have made notable progress in developing national strategies, improving surveillance systems, and strengthening multisectoral collaboration, although efforts are often constrained by limited resources and workforce capacity.

In contrast, low-income and conflict-affected settings such as Yemen, Syria, and Afghanistan face significant challenges, including fragile health systems, limited laboratory and surveillance infrastructure, and ongoing instability. These conditions hinder coordination, delay detection and response efforts, and make sustained implementation of One Health approaches more difficult.

Overall, while important progress has been made, sustained investment, stronger governance, and enhanced coordination are essential to ensure consistent and effective One Health implementation across the region

2.3 Challenges

Despite growing efforts, significant challenges continue to limit effective implementation of One Health in the EMR. Many countries still lack the systems and resources needed for prevention, early detection, reflecting broader gaps in governance, coordination, and capacity.

A major issue is fragmented multisectoral coordination. Existing mechanisms are often organized around specific issues, rather than functioning as integrated systems. Even where formal platforms exist in countries like Egypt, Jordan, Qatar, and Saudi Arabia, unclear roles and weak accountability limit effectiveness, while engagement beyond government remains limited.

Surveillance systems are also fragmented across sectors, with moderate capacity for event-based surveillance but weaker performance in areas such as AMR. Inconsistent data sharing leads to duplication, gaps, and limited integration of human, animal, and environmental data.

Workforce limitations further constrain implementation, with shortages of trained professionals and limited integration of One Health competencies. Rapid response teams are common but often lack multidisciplinary capacity. In addition, weak institutionalization, characterized by unclear mandates, limited leadership, and project-based financing undermines sustainability. Overall, fragmented coordination, limited integrated surveillance, workforce gaps, and weak governance continue to hinder effective One Health implementation in the EMR, highlighting the need for stronger, more coordinated systems.

2.4 Opportunities and Momentum

Despite ongoing challenges, there is growing momentum to advance the One Health approach in the EMR. Increased global recognition of integrated health approaches, particularly after COVID-19, along with rising donor support, has created favorable conditions for investment in prevention, preparedness, and response.

At the regional level, political commitment has strengthened, with most countries establishing multisectoral coordination mechanisms. While still fragmented, these provide a foundation for more integrated collaboration. Existing surveillance and early warning systems also offer a baseline for expansion into cross sector platforms.

Workforce development presents further opportunities. Frameworks such as the Competencies for One Health Field Epidemiology (COHFE), supported by the WHO, FAO, and WOAH, alongside training programs for veterinary and environmental health, are strengthening multidisciplinary capacity.

In addition, evolving global governance, particularly the Quadripartite partnership, including the UNEP, supports improved coordination and reinforces commitment to One Health.


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Overall, increasing political will, donor investment, and existing frameworks provide a strong foundation for advancing integrated approaches and improving the region's capacity to prevent, detect, and respond to emerging health threats.

3. EMPHNET's Experience

3.1 EMPHNET's Approach to One Health

Operational Guidance Grounded in Field Realities: Using insights from regional experience to create practical tools and frameworks that are adapted to local needs and contexts.

Evidence to Action: Research findings, field observations, and grey are translated into actionable, context-relevant recommendations sustainable One Health practices.

Cross-sectoral Coordination and Communication: Creating strong encourage collaboration and the sharing of information across different support coordinated planning and collective action.

Workforce Development: Efforts focus on enhancing One Health capacities across human, animal, and environmental health sectors through specialized training programs, including rapid response and biorisk management, delivered in various contexts.

Inclusive Participation: Communities are actively involved as partners in shaping One Health interventions by incorporating their insights and knowledge into planning, execution, and evaluation processes.

3.2 Workforce Development

One Health remains relatively underdeveloped in the region, facing challenges such as limited training opportunities. EMPHNET addresses this by expanding training initiatives while simultaneously strengthening One Health curricula and frameworks. This ensures that trained professionals are effectively utilized where their expertise is most needed

- Embedding the One Health approach into Field Epidemiology Training Program curricula by creating specialized tracks and developing focused training modules.
- Collaborating on the Regional Curriculum Framework for One Health Professional Training Programs to standardize training across the region
- Modifying rapid response team training to include multisectoral outbreak investigation and response
- Promoting collaboration within FETPs to establish a One Health Community of Practice in multiple EMR countries

3.3 Strengthening Surveillance and Early Detection

EMPHNET supports national initiatives to strengthen surveillance systems by enhancing the skills of key personnel, introducing diagnostic tools, and offering logistical and technological support. These efforts help improve the accuracy and speed of data sharing across sectors, enabling coordinated responses and informed decision-making on One Health priorities, including zoonotic diseases, antimicrobial resistance (AMR), and other shared health threats.

Supporting AMR Surveillance in Bangladesh

Activities

- Partnered with the Bangladesh Livestock Research Institute (BLRI)
- Implementing risk-based surveillance of antimicrobial resistance (AMR) in Enterobacteriaceae across farms and the environment interface.
- Monitoring AMR trends, focusing on extended spectrum beta-lactamase (ESBL) producers, carbapenem and colistin resistance.
- Identifying genomic resistance patterns of multidrug-resistant pathogens using next-generation sequencing
- Supported data collection and laboratory analysis through the BLRI AMR reference laboratory
- Developed an online dashboard to share findings and integrate data from ongoing AMR surveillance activities

Key Findings

- High prevalence of targeted pathogens in layer poultry farms and nearby environments, posing significant public health risks
- Multidrug resistant pathogens in poultry farms and surrounding environment pose major risks to human and animal health
- Limited awareness of antimicrobial resistance is observed among farming communities.
- Evidence of improper antimicrobial use contributing to high multidrug resistance levels

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Anthrax Control Response

Activities

- Assisted the Bangladesh Department of Livestock Services (DLS) in carrying out a One Health surveillance and response initiative in Meherpur district
- The initiative was led by a multidisciplinary working group including representatives from DLS, Chattogram Veterinary and Animal Sciences University (CVASU), the Institute of Epidemiology, Disease Control and Research (IEDCR), and development partners

Outcome

- One Health outbreak investigation guideline developed
- Established enhanced passive surveillance. Integrated the anthrax surveillance module into the Bangladesh Animal Health Intelligence System (BAHIS) to collect data from three Meherpur sentinel locations, as well as data from the other districts via the broader BAHIS module.
- Vaccinated 11,901 animals in Gangni sub-district
- Conducted 20 awarness campaigns reaching 760 individuals

Surveillance for Burkhloderia Pseudomallei in Bangladesh

Activities

- Initiated a one-year project to develop an environmental surveillance system for detecting Burkholderia pseudomallei in Bangladesh
- Addressed the absence of a national environmental surveillance program
- Focused on identifying the bacterium in soil and determining environmental sources
- Assessed exposure risks
- Collected and analyzed data, consolidating findings into a comprehensive report
- Shared findings with stakeholders, policymakers, and field workers
- Aimed to increase awareness of B. pseudomallei and its role in melioidosis, endemic in Bangladesh since 1988
- Collected and tested 1,365 samples from 12 districts

Outcome

- One soil sample in Kishoreganj tested positive via conventional PCR.
- No positive results from RT-PCR testing in soil or water samples

Laboratory-Based Surveillance for Brucellosis

JORDAN

Activities targeted three endemic areas: **East Amman, Karak**, and **Mafraq**, with over **400 professionals trained**.

Key Interventions:

- **Capacity Building:**
  - Clinicians and veterinarians were trained on case definitions, clinical presentation, transmission pathways, and treatment.
  - Laboratory personnel from both public health and veterinary sectors were trained on diagnostic methods, including:
    - » Rose Bengal Test
    - » Serum Agglutination Test (SAT)
    - » ELISA
- **Laboratory Strengthening:**
  - ELISA was introduced in provincial public health laboratories.
  - PCR was implemented at the Central Public Health Laboratory and Central Veterinary Laboratory.
- **System Improvements:**
  - Established and adopted new communication protocols to strengthen coordination:
    - » Between field teams and laboratories
    - » Between human and animal health sectors

Outcome

- Enhanced diagnostic capacity at both human and animal health levels
- Improved intersectoral communication
- Increased awareness of brucellosis transmission, prevention, diagnosis, and treatment
- Identification of disease incidence rates, associated risk factors, and bacterial genotypes

IRAQ

EMPHNET partnered with the Ministries of Health and Agriculture to strengthen **brucellosis surveillance, diagnostics,** and **control**, particularly through the introduction of molecular testing.

Target Areas:

- Babel, Diala, Maysan, and Wasit governorates

Key Interventions:

- **Training:**
  - 183 laboratory staff trained in Rose Bengal, ELISA, and PCR diagnostics
  - 95 clinicians and 16 veterinarians trained on case definitions
  - 8 surveillance staff trained on data entry and analysis using Epi Info
- **Laboratory and Surveillance Enhancements:**
  - ELISA introduced in provincial public health laboratories
  - PCR implemented in central public health and veterinary laboratories
  - Established sample transport systems from peripheral sites to central laboratories
- **Coordination:**
  - Strengthened epidemiological communication between human and animal health sectors

Outcome

- Improved diagnostic and surveillance capacity
- Determined the burden of brucellosis in targeted governorates

PAKISTAN

With support from EMPHNET, the National Agricultural Research Council (NARC) and the National Health Institute (NIH) initiated surveillance of animal brucellosis to reduce transmission to humans.

Target Areas:

- Sohan and Tarlai Union Councils in Islamabad

Key Interventions:

- **Training:**
  - 15 veterinarians and officers trained on:
    - » Case definitions
    - » Clinical signs
    - » Sample collection and treatment
    - » Diagnostic methods (Rose Bengal and Milk Ring Test - MRT)
  - 6 laboratory technicians trained:
    - » 4 from NARC and 2 from NIH on ELISA and PCR
- **Surveillance Integration:**
  - Established sentinel surveillance sites in Sohan and Tarlai
  - Integrated these sites into the national surveillance system

Outcome

- Strengthened early detection of brucellosis in animals
- Supported reduction of zoonotic transmission to humans

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3.4 Community Engagement

EMPHNET works in close partnership with local communities, especially in rural areas where people are more vulnerable to shifts in environmental and animal health. It recognizes that these communities and their networks play a key role in putting the One Health approach into practice at the grassroots level. By leveraging existing local systems, EMPHNET ensures its interventions are community-led, relevant, and sustainable over time.

Female-Led Onchocerciasis Elimination in Yemen

Actions:

- Conducted mass ivermectin distribution at household level
- Promoted house-to-house mobilization
- Prioritized female community volunteers
- Promoted community engagement through health education to improve coverage, trust, and participation

Impact:

- Administered 2,230,473 tablets
- Covered 8 governorates
- Distributed 290,261 referral cards
- Engaged 1,000 female volunteers
- 340 patients received treatment

Household-Led Malaria Control in Sudan

Actions:

- Initiated the Volunteers for Vector Control (V4V) program in Kassala, Sudan
- Trained 300 community volunteers in Larval Source Management (LSM) techniques
- Developed household guidelines for indoor mosquito control
- Created a digital tool to enable real-time data reporting and communication
- Promoted community participation through mosquito control activities at the household level

Impact:

- Promoted Larval Source Management (LSM) as an affordable and sustainable control strategy
- Involved local health authorities in project design, implementation, and supervision
- Fostered community ownership by supporting volunteer-led approaches
- Enabled real-time monitoring through digital tools to guide data-driven decision-making

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EMPHNET@Sudan

3.5 Partnerships and Regional Coordination

At the heart of the One Health approach is effective collaboration among stakeholders across multiple sectors. EMPHNET promotes this collaboration at national, regional, and international levels, ensuring broad and inclusive engagement. Through these networks, it enables the sharing of knowledge and experiences, helps shape global priorities, supports the development of context-specific solutions, and strengthens the overall implementation of One Health.

These efforts are underpinned by strong, cross-sector partnerships and institutional collaboration.

Key Partners Include:

- Ministry of Health
- Ministry of Agriculture
- Public Health Institutes
- Princess Haya Biotechnology Center (PHBC) of the Jordan University of Science and Technology (JUST)
- The National Agricultural Research Centre (NARC), the Pakistan Agricultural Research Council (PARC)
- AMR Multi-Stakeholder Partnership Platform
- AMR Communications Coalition (AMR-CC) Network
- Core Technical Team for reviewing the Competencies for One Health Field Epidemiology (COHFE) framework
- Food and Agriculture Organization
- Pakistan One Health
- Partnership for AMR Surveillance Excellence (PARSE)
- One Health Bangladesh
- Bangladesh Livestock Research Institute

Collaborative Areas:

- Joint Projects
- Capacity Building
- Research and surveillance
- Policy advocacy
- Working groups

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3.6 Policy and Governance

To strengthen the implementation of the One Health approach at the regional level, EMPHNET has focused on developing guiding documents and operational frameworks. These resources offer practical, context-specific guidance to help countries better respond to complex health challenges. In parallel, EMPHNET has prioritized supporting research and the evidence it generates, recognizing its essential role in advancing effective and informed One Health implementation across the region.

Key Guides Developed in Support of One Health Operationalization in the Region

- **Toward the Integration of Climate Change Action into Health Programs in the Eastern Mediterranean Region**
  - Maps key regional and global stakeholders in the climate–health field to foster partnerships and collaboration
  - Defines a strategic framework for engaging partners and policymakers on integrating climate and health efforts
  - Provides clear action steps to support local authorities and field partners in reducing climate-related health risks
- **Towards the Implementation of the One Health Approach in the Eastern Mediterranean Region**
  - Provides guidance on improving governance, legal, and policy frameworks.
  - Recommendations for improving coordination, communication, and collaboration.
  - Supports workforce and institutional capacity
  - Promotes regional data-sharing systems
  - Guides risk communication and community engagement

Strengthening One Health Governance Across Regions

Contribution to the Partnership for Antimicrobial Resistance Surveillance Excellence (PARSE)

- **Key Contributions in Southeast Asia**
  - Contributed to the design of standardized AMR surveillance protocols and standard operating procedures (SOPs) by conducting capacity mapping and assessments in Afghanistan.
  - Offered technical guidance to Pakistan and Bhutan during the development of their draft AMR surveillance protocols and SOPs.

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4. Recommendations and Priority Next Steps

4.1 Recommendations Based on EMPHNET's Experience

Reinforcing Intersectoral Coordination Mechanisms

Institutional frameworks that support collaboration among key sectors, such as public health, veterinary services, and environmental management, should be strengthened. Effective intersectoral committees are essential for coordinated priority-setting, resource allocation, and implementation of One Health strategies.

Strengthening Community-Based Surveillance

Community-level surveillance systems should be reinforced by actively engaging local populations in the monitoring and reporting of health events. Empowering communities in this manner will enhance early detection capabilities and facilitate timely responses to zoonotic disease threats.

Strengthening Multidisciplinary Rapid Response Teams

Rapid response teams should be further developed to ensure they are multidisciplinary in composition and adequately trained in cross-sectoral outbreak investigation and management. This will improve preparedness and response to public health emergencies involving multiple domains.

Expansion of Field Epidemiology Training Programs (FETPs)

Field Epidemiology Training Programs should be expanded and strengthened by introducing dedicated One Health tracks. This will enhance the capacity of epidemiologists to address complex health challenges that span multiple sectors.

Enhancing Public Awareness and Community Engagement

Comprehensive awareness campaigns should be developed to promote understanding of the One Health concept. These initiatives should emphasize the interconnected nature of health across sectors and encourage active participation from communities in prevention and response efforts.

4.2 Priority Next Step

Accelerating progress on One Health requires coordinated and sustained action across four interconnected priority areas.

First, countries must move from commitment to implementation by translating plans into practical, on-the-ground actions. This includes strengthening multisectoral coordination, advancing national planning processes, and building the necessary workforce and institutional capacity. Scaling up implementation is essential to deliver measurable and lasting impact.

Second, stronger investment in science, data, and knowledge exchange is needed to support informed decision-making. This involves enhancing collaboration with the scientific community, improving integrated data systems across sectors, and ensuring that evidence is effectively used to guide interventions, monitor outcomes, and respond to emerging risks.

Third, reinforcing policy engagement and governance is critical to embedding One Health within national and global agendas. Governments should prioritize the development of enabling policy frameworks, strengthen coordination mechanisms across sectors, and promote coherent approaches among ministries to ensure effective and unified action.

Fourth, sustainable financing must be secured to maintain and expand One Health efforts. This requires strengthening investment frameworks, aligning financial resources, and integrating One Health priorities into national budgets and development strategies to ensure long-term impact.

Together, these actions will enable countries to prevent risks at their source, detect threats early, and respond effectively. Strengthening surveillance and early warning systems, promoting resilient food and agricultural systems, protecting ecosystems, and reinforcing veterinary and public health services are key components of this effort.

Governments, international financial institutions, development partners, and the private sector are called upon to support integrated and sustained action by investing in implementation, advancing science and data systems, strengthening governance, and ensuring adequate and coordinated financing. These efforts are essential to reducing risks at the human–animal–environment interface and to building resilient, inclusive, and sustainable societies.

5. Conclusion

In conclusion, the One Health approach represents a critical shift toward a more integrated, preventive, and resilient model of global health. By recognizing the interconnectedness of human, animal, and environmental systems, it provides a comprehensive framework to address complex and overlapping health threats such as zoonotic diseases, antimicrobial resistance, and climate change. The Eastern Mediterranean Region faces a unique convergence of these risks, making the adoption of One Health not only relevant but urgent.

While significant progress has been made through regional frameworks, national initiatives, and organizations like EMPHNET, persistent challenges such as fragmented coordination, limited surveillance integration, and workforce gaps continue to hinder full implementation. However, growing political commitment, existing technical platforms, and increased global momentum offer strong opportunities to advance this approach.

Ultimately, strengthening One Health requires sustained investment, effective governance, and genuine collaboration across sectors. By moving from reactive responses to proactive prevention, countries can enhance their capacity to detect and mitigate threats early, reduce economic and social impacts, and build more resilient health systems. The path forward lies in translating commitments into action, ensuring that One Health becomes a fully operational and sustainable pillar of global and regional health security