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# National Framework for One Health

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**Between animal and  
human medicine there are no dividing lines  
— nor should there be**

-Rudolf Virchow, 1856

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# Preface

There is an intricate link between human and animal health, and the surrounding environment. Any disruption in this complex web results in adverse consequences for all the key elements. Challenges, therefore need to be comprehensively and collectively addressed. It is imperative to prevent and contain zoonotic infections, antimicrobial resistance and emergence of epidemics and pandemics due to novel pathogens for better human health. The attempt should be to reduce mortality, minimize morbidity and obviate resultant economic losses.

It is well known that two thirds of all infectious diseases have originated from wild animals, found primarily in degraded habitats. All pandemics of the current millennium, including the devastating COVID-19, are believed to have originated from animals. The burgeoning problem of antimicrobial resistance (AMR) is attributed partly to the growing and irrational use of antimicrobial agents in the animal and agriculture sector. Thus, there is an urgent need to address the dynamics of disease emergence at the human-animal-agriculture-environment interface and subsequently design interventions to rapidly prevent, detect and respond to such diseases in an efficient manner. These actions are critical for improved human and animal health and robust ecosystems.

The concept of One Health calls for joint efforts by all sectors towards this common goal. One Health does not involve the establishment of a new programme but is directed towards improved collaboration, coordination and commitment of relevant sectors in working together to minimize the impact of these diseases on human health and nutrition safety. One Health is essentially a multi-sectoral, interdisciplinary, and collaborative approach towards optimal health of animals, humans and the environment.

To advocate the use of One Health and demonstrate its application, the Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (OIE) and the World Health Organization (WHO) under their tripartite agreement and in collaboration with the United Nations Children's Fund (UNICEF) and the World Bank has developed a joint strategic framework titled, "Contributing to One World, One Health". It calls for strengthening of capacity to prevent, detect, and respond to disease outbreaks; establish efficient national emergency response capacity; and promote cross-sectoral collaboration and partnerships for improving human and animal health.

A similar framework to implement the One Health approach at the national level may facilitate its implementation and assist national authorities in addressing the agenda of (i) enhancing national capacity for zoonotic diseases and AMR for prevention, detection and response; and (ii) improving joint coordination and collaboration between major stakeholders for control of zoonoses and AMR.

With this objective, FAO has developed a National Framework for One Health to assist national authorities in initiating steps to strengthen efforts towards the control of AMR and disease in a comprehensive manner through collaborative activities among various sectors. The framework has been developed through extensive consultations with leading scientists from human health, animal health, fisheries, environment sectors representing research and academic institutions and international agencies.

We hope that national authorities find this framework useful and practical for initiating the One Health approach towards a healthier India.

Tomio Shichiri  
FAO Representative in India



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FAO sincerely acknowledges the contributions of experts namely Dr Jai P Narain, Dr Manju Bala, Dr Lata Kapoor, and Dr Simi Tewari from human health sector; Dr Praveen Malik, Prof R.K. Singh, Dr Ashok Kumar, Dr Jyoti Misri, and Dr MM Prasad from the animal health sector and Prof Mamatha Ballal, Dr Prejit Nambiar and Susweta Das Mitra from academic institutions. This document also benefitted from inputs from Mr Atul Bagai, Ms. Divya Datt and Mr Jitendra Sharma of United Nations Environment Program (UNEP), Dr Alexander Vokaty, World Health Organization (WHO) and Dr Umesh Alvadi, United States Agency for International Development (USAID) India.

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## Abbreviations and acronyms

<b>AMR</b>	antimicrobial resistance
<b>CDC</b>	US Centers for Disease Control and Prevention
<b>DALY</b>	Disability Adjusted Life Years
<b>EID</b>	emerging infectious diseases
<b>FAO</b>	Food and Agriculture Organization of the United Nations
<b>GHSA</b>	Global Health Security Agenda
<b>GLEWS</b>	Global Early Warning and Response System for Transboundary Animal Diseases
<b>OIE</b>	World Organisation for Animal Health
<b>PVS</b>	performance of veterinary services
<b>PPP</b>	public-private partnership
<b>SARS</b>	severe acute respiratory syndrome
<b>SDG</b>	sustainable development goals
<b>SAARC</b>	South Asian Association for Regional Cooperation
<b>UNEP</b>	United Nations Environment Programme
<b>UNISDR</b>	United Nations International Strategy for Disaster Reduction
<b>USAID</b>	United States Agency for International Development
<b>WAHIS</b>	World Animal Health Information System
<b>WHO</b>	World Health Organization



## Executive summary

COVID-19 pandemic, and apprehensions of imminent future pandemics have strongly emphasized the importance of bringing together expertise and services from several sectors mainly human health, animal health and environment to understand the factors that facilitate emergence and spread of severe public health challenges that may cause significant loss of life, misery, social disruption and economic loss – all of which have the potential to obstruct progress in human development. Pandemics, antimicrobial resistance (AMR), food-borne diseases and endemic zoonotic infections represent this group of public health issues. For the prevention, early detection and effective response, and to minimize their impact, a collective and shared multi-sectoral expertise and strength are required. This approach is widely recognized as One Health, and is gaining currency worldwide for its need and proven utility.

Till date, implementation of One Health approach has faced several barriers—fragmented and disconnected governance of health, animal health and environment, under-recognition of its economic benefits, absence of an agreement between professionals on way forward and working together, inadequate training and capacity building activities and lack of clarity about the definition, concept and scope of One Health approach.

A need for One Health approach was initially raised after avian influenza epidemics caused by influenza H5N1 virus. Unfortunately, it could not be taken forward. With damages inflicted by COVID-19 pandemic, countries recognized the importance of One Health. A roadmap is needed to catalyse major objectives and expected outcomes under a political commitment and sustained funding. India's National Action Plan on AMR is an excellent example of One Health approach and can be used as a guiding document to develop a workable roadmap for a country to respond to other similar public health challenges, especially in future pandemics.

One Health should not be construed as a stand-alone or new programme that has to be built de novo. This endeavour utilizes existing expertise and infrastructure in various sectors with focuses on inter-sectoral coordination, collaboration and communication. Essence of One Health is to provide a formal platform to people to plan and work together to achieve shared objectives.

Two core objectives for implementation of One Health are: (i) Improve national capacity for zoonotic diseases and AMR for prevention, detection and response, and (ii) Improve joint coordination and collaboration between major stakeholders for control of zoonoses and AMR. Within each of these broad objectives, several outcomes can be defined as well as monitored through a structured monitoring and evaluation framework.

Implementation of One Health warrants a strong and continuous national narrative on zoonoses that requires multi-sectoral, multi-disciplinary and multi-institutional response to public health problems. This involves especially pandemics and AMR through focussed actions on human-animal-agriculture-environment interface for the prevention, detection and responding to the public health events, which influence human and animal health.

This document provides guidance on development of activities for One Health at the country and peripheral levels. This framework can be utilized in developing country-specific One Health approach to mitigate impact of several catastrophic events on human and animal health and on the health of the planet thus facilitating accelerated human development.





1

## **Introduction and definitions**

# 1 Introduction and definitions

The COVID-19 pandemic has irreversibly changed the world like never before. Though this is not the first pandemic which has originated from aberrations at the human-animal-environment interface, it is the phenomenal impact on global health and economy that has forced the global community to perceive and respond to pandemics in a greater scientific way. COVID-19 pandemic is neither the first and nor the last to have developed from close contact between humans and wildlife. The Severe Acute Respiratory Syndrome (SARS) pandemic in 2002–2003 and the Middle-East Respiratory Syndrome (MERS) event in 2011 (Kan *et al.*, 2005) were traced to human interaction with animals (WHO, 2020). It is well established that 75 per cent of new or emerging infectious diseases originate from animals (CDCP, 2017).

Apart from epidemic-prone zoonotic infections, there are several zoonoses that are endemic and responsible for significant mortality and morbidity in humans. These diseases are transmitted at the human-animal interface through direct or indirect human exposure to animals, their products (e.g. meat, milk, eggs) and/or their environment (WHO, 2020a). Burden of these diseases is significant. These zoonoses and food-borne infections are responsible for almost one-fourth of the *Disability Adjusted Life Years* (DALYs) lost to infectious diseases. Maximum impact is in the developing countries, though the high income countries are not absolutely protected (Grace *et al.*, 2012).

The interaction of the human population with its environment, wildlife and livestock is increasing swiftly across the world. As populations and their needs increase, the contact between human and wild animal habitats increases. This interaction results in exposure to new pathogens, mainly viruses. It is estimated that more than 30,000 corona viruses are currently circulating in wildlife (Forbes, 2020).

Early detection and mounting efficient response to emerging zoonotic infections shall warrant a comprehensive understanding and actions at the human-animal-environment interface to avoid repeat of pandemics with catastrophic implications. There are various other significant drivers of such public health events. These include anthropogenic changes, globalization, climate change, population growth, land-use change, destruction of habitats, and interaction with wildlife (Whitmee, 2015). Pandemics were primarily caused by zoonotic pathogens originating from wild-life. Their emergence correlates strongly with changes in land-use and impacting biodiversity (Morse, 2018). It is, hence, critical to bring together all stakeholders to launch comprehensive efforts to understand dynamics of emergence of diseases and making effective response.

Accordingly, One Health approach is being vigorously advocated globally by several international organizations, including the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE), and the World Health Organization (WHO). These organizations have a formal tripartite collaboration on human-animal-ecosystem and share the coordination of activities that investigate and address health risks at the human-animal-environment interface (OIE, 2020; FAO, 2020). These agencies also developed a strategic framework that contributed to the management of several zoonoses especially Influenza H5N1 pandemic (Mackenzie and Jeggo, 2019).

Emergence and spread of AMR is linked with extensive and irrational use of antibiotics in animal health, agricultural sectors and sewage from health care and manufacturing

## National Framework for One Health

institutions. The antibiotics are used in animals for therapeutic and prophylactic purposes. In addition, these agents are used for a growth promotion role as a low cost alternative to poor sanitation in and around animal habitat. Indiscriminate use of antimicrobial agents causes emergence and selection of resistant pathogens having a potential to spread through animal-human interaction or food chain. These resistant pathogens cause diseases in humans that inadequately respond to affordable antimicrobials. AMR is now recognized as one of the biggest challenges in mankind's fight against infectious diseases. One Health approach is the globally accepted solution to mitigate AMR. Global Action Plan for AMR (WHO, 2020c) – and corresponding national action plans are examples of One Health approach.

### Barriers to implement One Health

Important systemic obstructions preventing from mounting a joint strategy in the true spirit of One Health are given in Table 1. The proposed framework shall endeavour to overcome these.

**Table 1: Barriers to implement One Health**

● Under-recognition of economic and health benefits
● Fragmented and disconnected governance of health, animal health and environment
● Absence of an agreement between policy makers and professionals on way forward
● Inadequate joint training and capacity building activities
■ Lack of clarity about the concept and scope of One Health approach
■ Understanding of definitions
● Paucity of data on interaction between human and animals and its implications

### Definitions of One Health

There are several definitions of One Health. Some of these are:

One Health is a multi-sectoral, interdisciplinary, and collaborative approach to attain optimal health for animals, the environment, and humans (CDCP, 2020). One Health can provide a framework for national authorities to understand and implement it for improved connectivity and collaboration among various stakeholders (Järhult and El Zowalaty, 2020).

World Bank describes One Health as: a framework for enhanced collaboration in areas of common interests (intersections), with initial concentration on zoonotic diseases, that will reduce risk, improve public health globally and support poverty alleviation and economic growth in developing countries (World Bank, 2020).

One Health, broadly, can also be defined as "the collaborative efforts of multiple disciplines working locally, nationally, and globally to attain optimal health for people, animals, and our environment (AVMA, 2020)."

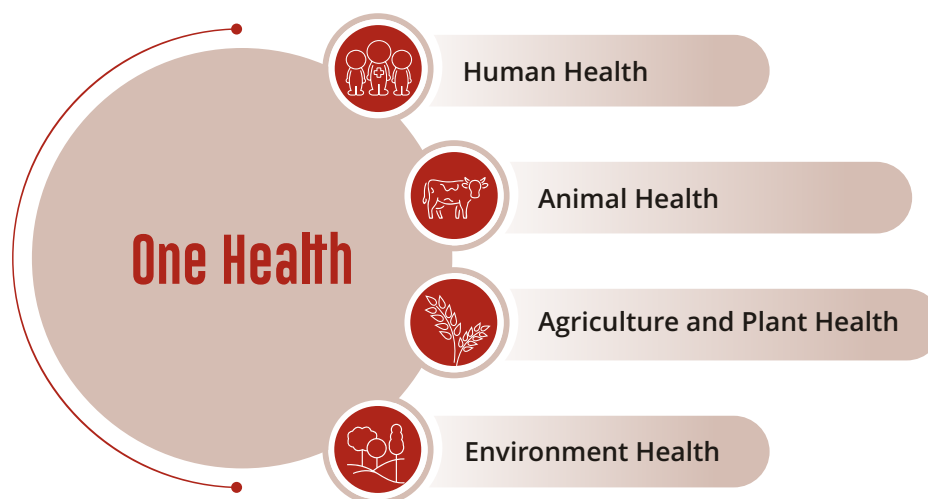


One Health offers an approach to yield added value from the collective strengthening of human, animal, and environmental health systems to enable their coordination and collaboration to address threats at the human-animal-environment interface for effective prevention, detection, response, and recovery.

All One Health definitions enunciate prevention, diagnosis, response and recovery from events influencing human and animal health through strengthening of sector specific capacity by major sectors, and amplifying their impact through essentiality of inter-sectoral collaboration (Fig 1).

In summary, One Health means working together of human, animal and environment sectors to achieve shared objectives.

**Fig 1: One Health: Intersection between human health, animal health, agriculture and environment**



Implementation of One Health does not require merger of various sectors. Basic tenet of One Health is to strengthen core capacity in every sector that has a bearing upon prevention, detection, response and recovery to zoonotic infections and AMR, and assure a sustainable, strong, beneficial and productive mechanism of coordination and collaboration that results in synergistic action for public good.

One Health is considered a global public good. The International Task Force on Global Public Goods defined global public goods as: "Issues that are broadly conceived as important to the international community, that for the most part cannot or will not be adequately addressed by individual countries acting alone and that are defined through a broad international consensus or a legitimate process of decision-making" (CBD, 2007).

The public goods can be categorized as local or national depending upon the extent of its benefits. One Health approach fulfils the criteria of being public goods which is non-rival in consumption and has non-excludable benefits. Hence, it needs to be given priority as an important global public good.



2

**Rationale**

## 2 Rationale

The next pandemic is imminent. In all likelihood, it will also be caused by jumping of species by one of the zoonotic viruses that are circulating among animals. An estimated 1.7 million viral species are circulating among wildlife and 50 per cent of these have the potential to cause human infections (Daszak et al., 2018). In the absence of serious efforts to preserve the environment and wildlife ecology, it is impossible to prevent the emergence of these novel pathogens from animals and moving to humans. This can ignite epidemics with potential to explode into pandemics. The frequency of occurrence and impact of novel viruses shall increase because of several socio-environmental factors, which are not being addressed comprehensively (Table 2).

**Table 2: Socio-environmental factors influencing emergence of novel viruses and pandemics**

• Continued wide-scale changes in land use
• Transformation of agricultural sector without adequate biosecurity
• Climate change
• Trade and travel
• Unplanned urbanization
• Developmental activities deterrent to biodiversity sustenance
• Other factors that can facilitate the risk of spill over and spread of diseases

Maintaining a state of perpetual pandemic preparedness is not an option, rather a necessity for the global community to mitigate mortality and morbidity due to such events. This will prevent economies sliding back by decades, prevent loss of lives and minimize ensuing disruptive social chaos.

**Table 3: Major factors promoting application of One Health approach**

1. Links between animal, human, agriculture and environmental health for food systems emergencies and diseases of public health importance neglected and endemic zoonotic infections antimicrobial resistance
2. Enormous economic losses
3. Reactive response to outbreaks of zoonotic infections
4. Persistence of socio-ecological enabling drivers Degradation of nature Extensive land-use change Climate change Loss of biodiversity
5. Efficient use of scarce resources

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Greater collaborative approaches and interventions to strengthen public health systems at the human-animal-environment interface are needed because of aforesaid factors (Table 3). These require all-encompassing management approach that is aligned with achievement of health in true sense with efficient use of resources.

### Economic argument for One Health

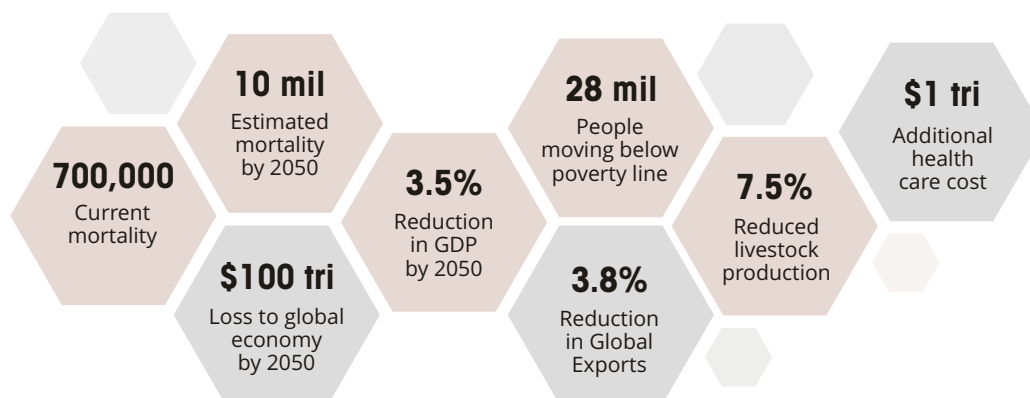
The economic case for One Health is compelling. Six major outbreaks of zoonoses between 1997 and 2009 caused economic losses of \$80 billion. If these events could be prevented, a saving of \$7 billion per year would have resulted (World Bank, 2012). Endemic zoonoses also cause enormous economic losses. It is estimated that their prevention can obviate annual loss of \$90 billion while investment in their prevention and control does not exceed \$25 billion (Grace, 2014).

Current millennium has seen several pandemics. The frequency of pandemics is increasing and so is the severity and impact of novel pathogens – mainly viruses of wildlife origin on human health, food security and global economy (Table 4). The pandemics have demonstrated their potential to push back global efforts in improving human development.

**Table 4: Impact of pandemics (2000-2020)**

Pathogen causing pandemic	Year	Cases	Deaths	Estimated loss (USD)
1 SARS CoV-1 (OIE, 2020)	2002-03	8429	813	41.5 billion
2 Influenza H5N1 (OIE, 2020)	2004-2006	486	282	30 billion
3 Influenza H1N1 (WHO, 2010)	2009	-	18500	50 billion
4 MERS CoV (WHO, 2020d)	2011	2562	881	2.6 billion (only in Republic of Korea) (Joo et al., 2019)
5 SARS CoV-2 (till 12 Oct 2020) (WHO, 2019)	2020	>37 mil	>1 mil	3.5 trillion (as on 20 Sep 2020) (The Financial Times, 2020)

**Fig 2: Impact of inaction on AMR on human development till 2050**



The impact of pandemics is grossly visible. Endemic zoonotic infections- which are naturally transmitted between vertebrate animals and man, account for more than one billion cases and a million deaths per year. These endemic diseases also cause burden through impacts on health and livelihoods, as well as on agricultural production and ecosystems. Impact of AMR on the global economy was extensively studied and projected as the cost of inaction till 2050 (Fig 2; AMR, 2020).

### One Health linkages with UN Sustainable Development Goals

The UN Sustainable Development Goals (SDGs) constitute the global roadmap to accelerate human development and alleviate poverty (Fig 3). One Health has direct relevance for several SDGs namely 1, 2, 3, 6, 10, 13, 14, 15, and 17—and is indirectly relevant for each of the others—which underlines how important human, animal and environment health is for development. SDG 16 in terms of environmental justice is also directly related to One Health. Collectively, improving health within and across these spheres for integrated understanding and action will help the world achieve a more sustainable future.

Fig 3: Sustainable Development Goals



### Global initiatives for One Health

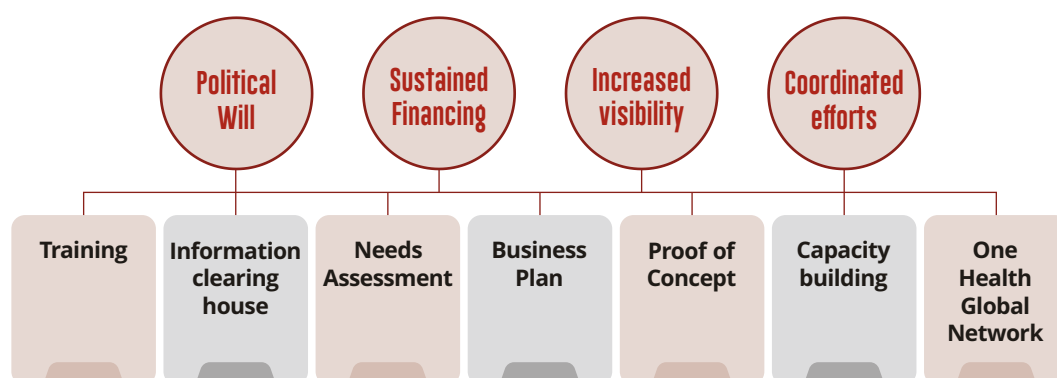
In 2008, the FAO, OIE and WHO, along with UNICEF, UNSIC and the World Bank, developed a joint strategic framework “Contributing to One World, One Health” (Fig 4). This framework addresses risks associated with emerging diseases and advocates for strengthening approach at the human-animal-environment interface (WHO, 2020e). It calls upon strengthening of capacity to prevent, detect, and respond to disease outbreaks; establish efficient national emergency response capacity, and promote cross-sectoral collaboration and partnerships for improving human and animal health (CDC, 2011).

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OIE developed Performance of Veterinary Services (PVS) related tools. The OIE PVS evaluation tool established four fundamental components and 47 critical competencies against which the veterinary services are evaluated (OIE, 2020). The WHO developed a costing tool to help countries estimate costs for core actions needed to fulfil International Health Regulations (2005) core capacities. In 2016, WHO launched a Joint External Evaluation (JEE) tool to facilitate assessment of national capacities to prevent, detect, and rapidly respond to public health threats under the IHR (2005) and integrated some sources of information from the OIE PVS (WHO-OIE, 2017). The JEE tool is built on 4 core elements (prevention, detection, response, other IHR-related hazards, and point of entry), 19 technical areas, and 48 associated indicators. The first round of JEE was implemented in many countries across the world and the second edition was published in 2018.

Whereas, human and animal health services are well defined, the lack of a concrete assessment tool to define and measure relevant capacities for environmental health services impede realistic assessment for improvements in One Health.

**Fig 4: FAO-OIE-WHO Framework for One Health (2008)**



The World Bank and other leading development partners have been strongly advocating implementation of One Health approach with the primary focus of avoiding any disruption in the global efforts to better human lives. Financial support from these partners is readily available to catalyse initiation of One Health approach and to establishment and strengthening of key elements (OIE, 2020).

## Global health security agenda

The Global Health Security Agenda (GHSA) is a group of 69 countries (GHSA, 2020), international organizations and non-governmental organizations, and private sector companies that came together to achieve the vision of a world safe and secure it from global health threats posed by infectious diseases.

To realise this vision, the GHSA leverages and complements the strengths and resources of multi-sectoral and multilateral partners to address priorities and gaps in efforts to build and improve country capacity and leadership in the prevention and early detection of, and effective response to, infectious disease threats. GHSA complements implementation of One Health.

### **UN environment assembly resolution**

At the third session of the UN Environment Assembly (UNEA 3) in 2017, a resolution was passed to prepare, in partnership with WHO, OIE, FAO and other organizations, by the fifth session of the United Nations Environment Assembly (UNEA 5) in 2021, a report on the environmental impacts of antimicrobial resistance and the causes for the development and spread of resistance in the environment, including the gaps in understanding of those impacts and causes. The resolution also encouraged Member States to consider, as part of evidence-based environmental policymaking, putting in place measures, as nationally appropriate, to effectively manage waste and wastewater to minimize their contribution to antimicrobial resistance through environmental contamination, including that applicable to municipalities, the agricultural industry, health-care facilities, manufacturers of antibiotics, household detergent waste and heavy metals (UNEA, 2017).

### **Regional network for South East Asia**

Massey University of New Zealand has been coordinating a network of One Health hubs in eight Asian countries viz. Afghanistan, Bangladesh, Bhutan, India (yet to be made functional), Nepal, Pakistan and Sri Lanka. This network can be an important resource in capacity building and technical inputs in planning and programme development (<http://www.onehealthnetwork.asia/>).

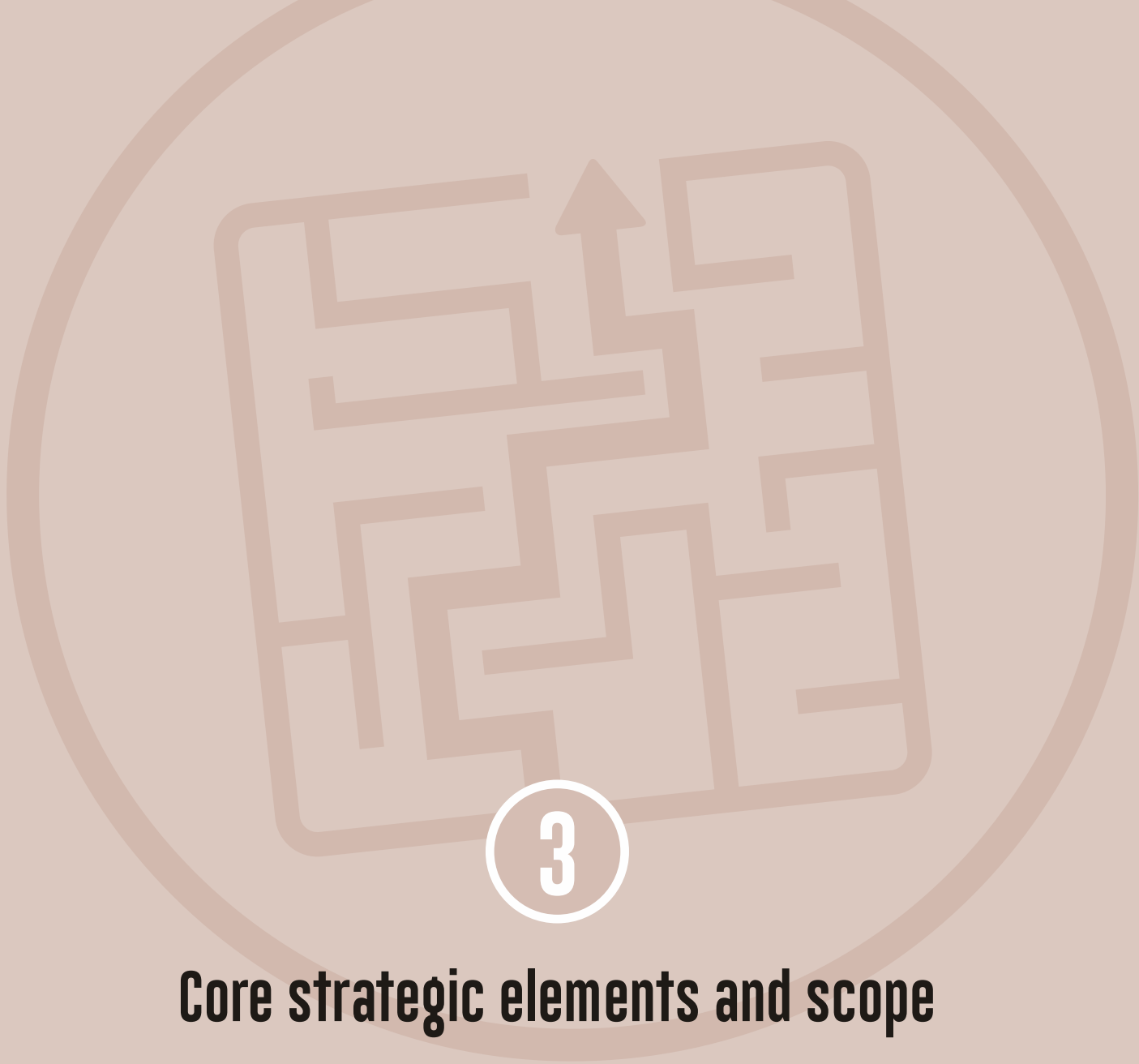
### **Southeast Asia One Health university network**

The Southeast Asia One Health University Network was established in 2011 and currently comprises 87 universities from Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand, and Vietnam. It aims to develop a resilient and competent One Health workforce by leveraging education, research, and training provided by the networks. The members of network collaborate to enhance One Health workforce capacity with cross-sectoral competencies to effectively prevent, detect and respond to infectious disease threats.

### **National initiatives in India**

India initiated its efforts to bring together human health and animal health in 1980s. This process was guided through the National Committee on Zoonoses that was co-chaired by the Director General of Health Services and the Animal Husbandry Commissioner of India. Similar Committees were established at State levels too.

The Department of Biotechnology, Government of India recently established a "Centre of One Health" at NIAB, Hyderabad. Initiatives were also taken by the Indian Council of Medical Research (ICMR). It is essential to bring together all these components to move forward in unison and benefit from outputs generated in the recent past.



# **Core strategic elements and scope**



## 3 Core strategic elements and scope

The possible core strategic elements for implementation of One Health in any country are:

- (i) improving capacity for public health actions in major stakeholders viz., human health, animal health and environment management,
- (ii) understanding and responding to the drivers that threaten health,
- (iii) optimizing the effectiveness of public health systems in achieving these goals within each sector, and
- (iv) instituting strong, continuous and mutually beneficial coordination and collaboration between all stakeholders through multi disciplinary and multi-institutional joint planning and implementation.

### Scope of framework

One Health Framework is intended to promote activities at human-animal-environment/ecosystem interfaces by providing generic guidance for comprehensive national response to prevent, prepare, detect, respond to, and recover from events especially pandemic and AMR, and assure human and animal health security (Fig 5).

**Fig 5: Key outcomes of One Health**



This Framework addresses collaboration and cooperation between human health systems, animal health systems, and environmental health and its management. The primary value of One Health is to bring together sectors at the human-animal environment interface to allow a more complete, synergistic and robust consideration of benefits and costs of different disease management options (some of which may be long lasting, particularly with environmental degradation).

## National Framework for One Health

### Essential drivers of One Health

One Health implementation shall be driven through 3 Ps – policies, programme and people. All three shall have bearing upon various components as shown below.



### Major stakeholders for One Health

Three sectors (human health, animal health, and environment) are usually considered as major players.

**Table 6: Important stakeholders in implementation of One Health**

Government sectors (Federal, State and District)	Non-Governmental Sectors	International Partners
Health	NGOs	FAO
Animal health	Community leaders	OIE
Environment	One Health champions	WHO
Forests and wildlife	Private sector for human health	UNEP
Finance	Private sector for animal health	CDC
Technical education	Farmers associations	World Bank
General education at school and college	Professionals Associations	USAID
Regulatory authorities and Councils	Pharmaceuticals (medicines, diagnostic and vaccine producers)	Regional Networks
Research bodies	Food processing industry	Regional Political Platforms (SAARC)
Food processing		
Communication and social scientist		
Academic institutes		

There are many other sectors which comprise a whole-of-society approach at national and international level that contribute significantly to implementation of One Health (Table 6).



4

**Guiding principles and  
approach to initiate One Health**



## 4 Guiding principles and approach to initiate One Health

### Guiding principles

The guiding principles for initiation and implementation of One Health approach in totality in any setting are following:

- galvanize national leadership to build and sustain One Health approach as a public good through political, technical and financial commitments,
- emphasize One Health as a shared responsibility to be fulfilled through active multi-sectoral collaboration, coordination and oversight,
- assure inclusiveness by advocating with participation of all stakeholders,
- develop multi-sectoral, multi-institutional, multidisciplinary programme with joint planning to address the identified gaps in capacity and communication through collaborative activities,
- optimally utilize existing infrastructure and human resources strengthen these within their own domains and strengthen them in context of One Health to proactively respond to emerging challenges,
- institute strong, continuous and transparent communication mechanisms,
- promote the best use of affordable technologies and leveraging of resources to achieve results,
- generate and promote open and public sharing of information, processes, and gaps and catalyse community participation,
- implement global and national best practices in local context, and
- develop and use clear targets and indicators to measure progress.

### Key elements to implement One Health

Given below are salient elements that may be considered while initiating One Health approach

- Political commitment
- Policy formulation
- Sustainable financing
- Programme development and implementation
- Knowledge sharing
- Institutional (multi-sectoral and multi- disciplinary)collaboration
- Capacity enhancement
- Engagement of civil society
- Active participation of the communities and awareness raising

**Step-by-step approach at national level in operationalising One Health**

Initiation of One Health approach shall require identification of key steps in context of existing capacities and overall status of health, animal health and environment. Some broad key steps have been suggested in the World Bank document, “Towards One Health: New Approaches to Managing Zoonotic Diseases (World Bank, 2020)”.

Effective prevention and control measures within the overall mandate of One Health have to be initiated by national authorities through multisector strategies and active collaboration across professional disciplines. International agencies bring in substantial expertise and resources and their cooperation should be sought to play a supporting role. Following 12-step approach (Table 7) is suggested with predominant impact of each step on a specific component of the programme.

**Table 7: Step-by-step approach to initiate and operationalize One Health**

Sr. No.	Step	Impact
1	Identify in-country champions and relevant international agencies (FAO, OIE, UNEP, WHO, CDC, World Bank, ADB e.g.) and encourage their interaction with political leadership	Advocacy
2	Develop and present an evidence-based burden of zoonoses on health and food security on the basis of situation analyses	Technical justification
3	Conduct analyses economic burden of disease on human health and impact on trade, GDP, poverty reduction, gender inequities using One Health Framework for Estimating Economic Costs of Zoonotic Diseases on Society (Narro et al.,2011)	Economic and societal justification
4	Systematically assess the existing strengths and major gaps within the public health, veterinary services and environment sector to contribute to One Health. Use tools developed by WHO and OIE. Focus on availability of adequate number of skilled and trained human resource	Assessment of strengths and needs of stakeholders
5	Support establishment of multi-sectoral and joint mechanisms of steering the activities, planning and implementation at national and state levels with designated focal points in major sectors for intra-sectoral implementation and inter-sectoral collaboration	Collaborative systems and activities through a nationally agreed Plan of Action
6	Undertake development, operationalization and costing of Plan of Action, seek financial support from national budget and external sources to operationalize activities and commence planned activities for prevention, detection and response	Sustained funding and implementation of Plan of Action
7	Establish technical advisory groups and experts committee to strengthen technical capacity, legislative measures, processes and devise collaboration mechanisms as well as draft technical guidelines, simulation exercises and replication of evidence-based best practices	Capacity building and improving formal inter-sectoral collaboration
8	Develop multi-sectoral training plan comprising need assessment, development of curriculum, identification of trainers across sectors, organization of training courses, assessing competence of trained human resource and provision of post training support	Capacity building (technical and collaborative)

Sr. No.	Step	Impact
9	Review teaching and training curricula in medical, veterinary, environment sectors and suggest appropriate incorporation of zoonoses and AMR component	Strengthening of Human Resource
10	Identify, assess and designate institutions of excellence in all sectors, promote their twinning and expand their mandate for collaborative activities and research pertaining to One Health especially joint surveillance and detection of early warning signals	Capacity building
11	Develop a joint M&E plan and use it to monitor the progress being made through SMART indicators. Undertake independent external assessment, whenever feasible, organize periodical reviews for course correction	M&E
12	Develop and implement a comprehensive risk communication strategy that, among others addresses social factors in local context of the communities to make them aware of impact of zoonoses and simple, doable, non-pharmaceutical actions that the communities can take. Utilize trained grass root workers, NGOs and community-based organizations in galvanizing communities to bring about behavioural change	Community engagement and empowerment

### Potential entry points for One Health

One Health is an approach. On recognition of its importance, a process to initiate its implementation has to begin. Instead of commencing in a big way and across all diseases, it may be better to identify most practical few entry points, which can be considered in context with a rapid assessment for feasibility. A few examples are:

- AMR
- pandemic or any other critical event
- endemic and epidemic zoonoses, and
- initiatives by professional bodies/associations.

AMR, globally recognized as a major problem, requires One Health response for its containment. AMR is already high on national health agenda and relevant sectors are already primed for it. COVID-19 pandemic renewed the keen interest in One Health and whole-of-society response for its prevention, early detection and instituting appropriate response to this public health emergency. Pandemic-preparedness plans to thwart future pandemics are already under preparation. One Health can be central to this plan.

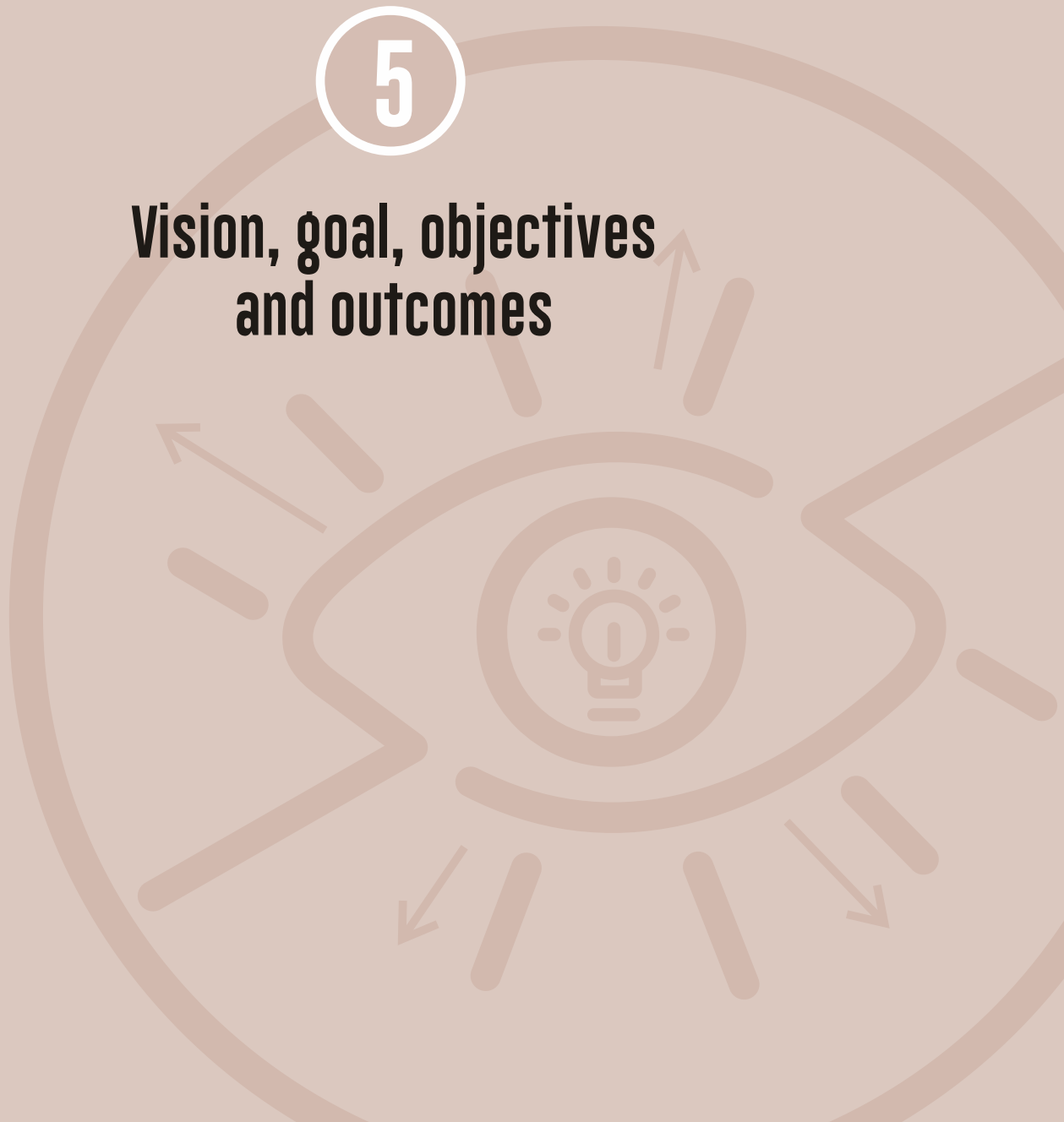
In addition to epidemic-prone disease-specific entry points, One Health approaches can be applied as a comprehensive response to address the magnitude of priority local endemic zoonotic diseases.

Professional associations carry strong voice in influencing decisions by the policy makers. One Health should be an agenda with these associations. These associations can make a strong case with national authorities for initiating One Health programme.

It is mandatory that the decision makers are made aware of the numerous benefits of One Health and huge return on any investment made for One Health especially for farmers' income, trade and tourism. Concurrent advocacy by the international agencies (FAO, OIE, WHO, World Bank) shall give additional confidence and global perspective to national authorities.

5

## **Vision, goal, objectives and outcomes**





## 5 Vision, goal, objectives and outcomes

### Vision

To have a healthier and productive human and animal population co-existing in a safe environment

### Goal

To strengthen national response to zoonotic infections that are endemic and with epidemic or pandemic potential including antimicrobial resistance

### Objectives

Achieving the goal requires:

1. Improved zoonotic disease and AMR prevention, detection and response
2. Improved coordination and collaboration among major stakeholders in control of zoonoses

### Outcomes

Each objective can be achieved through key outcomes:

#### Objective 1. Improved zoonotic disease prevention, detection and response

- Outcome 1.1 Strong leadership and governance
- Outcome 1.2 Adequate and appropriate sustained financing and infrastructure
- Outcome 1.3 Policy and collaborative programme development
- Outcome 1.4 Human resource development
- Outcome 1.5 Better surveillance and laboratory testing
- Outcome 1.6 Improved preparedness and response capacity
- Outcome 1.7 Implementation of evidence-based risk mitigation policies
- Outcome 1.8 Innovations and R&D including strong regulatory framework

#### Objective 2. Improved joint coordination and collaboration among major stakeholders in control of zoonoses

- Outcome 2.1 Communication among stakeholders on continuous basis
- Outcome 2.2 Effective partnerships and networks
- Outcome 2.3 Improved joint information systems and research capacity
- Outcome 2.4 Active community and civil society engagement
- Outcome 2.5 Effective international engagement

**Table8 : Relationship between Objectives and key elements**

Objectives	Outcomes	Prevent	Detect	Respond	Recover
1. Improved national zoonotic disease prevention, detection and response	1.1 Strong leadership and governance	+++	+++	+++	+++
	1.2 Adequate and appropriate financing and infrastructure	+++	+++	+++	+++
	1.3 Policy and collaborative programme development	+++	+++	+++	+++
	1.4 Human resource development	+++	+++	+++	+++
	1.5 Better surveillance and public health laboratory testing	+++	+++	++	+
	1.6 Improved preparedness and response capacity	++	+++	+++	+
	1.7 Implementation of evidence-based risk mitigation policies	+++	+++	+	+
	1.8 Innovations and R&D including strong regulatory framework	+++	+++	+++	++
2 Improved joint coordination and collaboration	2.1 Continuous communication between stakeholders	+++	+++	+++	+++
	2.2 Effective partnerships and networks	+++	+++	+++	+++
	2.3 Improved information systems and research capacity	+	+++	+++	++
	2.4 Active community and civil society engagement	+++	+++	+++	++
	2.5 Effective international engagement	++	++	++	++

+++ : Strong action      ++ : Moderate action      + : Sustained action

While each outcome area is important in its own right, the Framework acknowledges the interrelations between them all and recognises that specific action under one outcome area can also support the goals of others (Table 8).

The expected outcomes and suggested specific activities are described hereunder:

### **Objective 1: Improved zoonotic disease prevention, detection and response**

#### **Outcome 1.1: Strong leadership and governance**

A strong and responsive leadership and governance is essential to establish a nationally coordinated system to implement One Health by bringing together various stakeholders and harnessing their expertise and resources available within the country in different sectors to implement One Health related activities:

##### **Key activities**

- Establish a nationally coordinated formal system for implementing One Health activities.
- Constitute an inter-sectoral steering committee under the chairpersonship of a high-level policy-maker for policy formulation, resource mobilization and oversight of One Health
- Institute a One Health dedicated cell each in the Ministry of Health, Ministry of Agriculture and Ministry of Environment for strengthening capacity and coordinating national activities and sharing information with other sectors in the Country
- Designate focal points for co-ordinating One Health -related activities in each of the three ministries
- Seek support from international agencies and development partners to promote access to global information, best practices and technologies and mobilization of funds
- Approach One Health using and strengthening existing systems and services as related to health and linked factors
- Consider embedding veterinarians within health ministries and public health specialists in agriculture departments to act as technical resources and catalysts
- Establish legislation and regulations with legal mandate and chain of command for disease risk analysis and appropriate response
- Define priority diseases/areas for multi-sectoral collaboration to help target investments for measurable outcomes
- Monitor key environmental determinants that have the potential to influence health and their impact on human and animal health
- Establish national multi-sectoral expert advisory committees to develop or adapt guidelines for technical work, programmatic oversight and inter-sectoral collaboration
- Undertake prioritization of the zoonotic pathogens
- Organize multi-sectoral national/state workshops on the pattern of IHR-PVS National Bridging Workshops to analyse and improve the collaboration between various sectors and development of comprehensive framework/workplan
- Include wildlife surveillance as an essential component of zoonoses surveillance
- Study epidemiology of the targeted zoonoses at the animal -human -wildlife -environment interface in different climatic zones of India
- Adopt global standards especially those pertaining to International Health Regulation (2005) and OIE-PVS as good practices for One Health
- Support and encourage national networks on all aspects of One Health to harness country-wide expertise
- Provide technical cooperation, training, and consultation on health information and analysis, and environmental monitoring for public health
- Support development of rapid diagnostic tools, new therapeutics and prophylactic agents and enhance their indigenous production through responsive regulatory mechanism
- Develop a common framework for joint Monitoring and Evaluation of the entire programme

Corresponding actions need to be taken at state level with functions limited to state and in accordance with national laws. These should include inter-state collaborative activities.

### Outcome 1.2: Adequate and appropriate financing and infrastructure

Implementation of both the objectives of One Health shall require additional resources to accentuate existing infrastructure as well as improve communication, collaboration and coordination across the sectors. Key activities are as follows:

#### Key activities

- Enhance overall budget allocation for human health, animal health and environment sectors across the country to make them robust and more responsive to challenges of One Health
- Allocate adequate resources with long term commitment to implement the strategy for the prevention, detection, control and recovery from events that fall within One Health paradigm
- Utilize the resources in enhancing infrastructure and building capacity within the sectors as per international norms for strengthening One Health activities
- Invest part of funding for improving multi-sectoral coordination and collaborative mechanism and activities
- Mobilize resources from external sources. Global environment is conducive for resource mobilization with several funding agencies keen to support One Health activities to mitigate economic losses that hamper human development

### Outcome 1.3: Policy and collaborative programme development

Recognizing the multidimensional nature of emerging infectious diseases (EID) and AMR, involving different health domains and socio-economic dimensions, a wide range of stakeholders is needed. This partnership should be vigorously promoted. While sector-specific institutions have clear roles, responsibilities and budgets, the mechanisms for cross-sectoral collaboration are not clearly identified. Success of One Health implementation depends upon– joint planning, development of policies and programme implementation in multidisciplinary and multi-institutional framework.

#### Key activities

- Engage policy makers and senior professionals in giving shape to a comprehensive national multi-sectoral framework that promotes joint activities for cost effective synergistic results
- Undertake comprehensive situation analyses including combined mapping of all diseases and conditions targeted for action within One Health
- Identify and address barriers to successful implementation of activities
- Jointly define and articulate objectives, goals, target populations, and success indicators. Leverage resources from all sectors
- Actively involve all sectors in the design, planning and implementation stages of all activities for One Health. Bring together leading institutions from various sectors to jointly develop and implement activities pertaining to One Health
- Obtain agreement, through a consultative process, of all stakeholders for all components and activities enunciated
- Integrate One Health public health actions at the country level, with interventions that are implementable at the local level, be it in urban, peri-urban, or rural areas
- Establish technical and communication working groups to produce guidance documents on prevention, detection and control based on global guidelines, technical reports, best practices and orientation from international technical advisory groups
- Empower stakeholders, ensure that they have a direct voice in decisions concerning the program's design, operation and a role in program delivery
- Incorporate lessons learned from other sectors, countries and programs in context of local needs and infrastructure
- Enhance private-public partnerships through the clear definition of private and public interests

**Outcome 1.4:** Human resource development

Most critical element in any programme development and implementation is its human resource. Substantial investments need to be made in this resource. If done, significant returns on this investment are guaranteed. One Health requires competence of human resource in technical and managerial as well as communication and coordination aspects.

**Key activities**

- Ensure availability of adequate number of qualified and skilled human resources. Build their capacity and enhance it on a continuous basis for the quality performance of assigned tasks
- Assure an optimal enabling working environment and rewarding careers for professionals and workers
- Ensure innovative and efficient recruitment and retention mechanisms for the human and animal health workforce
- Designate institutes and organizations and infrastructure for health workforce development

**Outcome 1.5:** Better surveillance and laboratory testing

Surveillance is fundamental to all disease control efforts, including ongoing risk assessment. Limited national capacity necessitates targeted surveillance in the highest-risk areas for disease emergence and spread. Cross border and regional surveillance are a vital complement to national surveillance for transboundary diseases. Grassroots-level disease surveillance can be quite difficult in countries with poor veterinary extension and human public health services. Thus, participatory approaches should be adopted, supported by appropriate training and laboratory support.

**Key activities**

- Improve surveillance skills and competencies at all levels for basic human and animal disease surveillance. Ensure joint surveillance through mutually agreed protocols
- Identify, map and characterize hotspot areas and institute improved human and animal surveillance in these hotspots and other at-risk or potential areas (such as in shared ecosystems between domestic and wild animals, newly encroached forest areas and wetlands) for early detection of pathogens
- Improve protocols, procedures and tools for carrying out surveillance and in-depth analysis of EID outbreaks
- Increase participation and capacity of communities and small scale stakeholders in agriculture and veterinary sectors in strategic surveillance in diseases of One Health concern
- Establish disease information systems across the country with mechanisms that facilitate seamless information sharing among wildlife, animal and public health sector teams
- Utilize technological advances to enhance national capacity in disease intelligence and analysis of disease
- Strengthen national diagnostic laboratories network with access to standardized reagents and quality system in place in both human and animal health sectors
- Develop reliable and preferably on-site indigenous diagnostics for surveillance and monitoring of selected zoonotic pathogens
- Establish national/regional centres for supporting and coordinating regional networks on diagnosis, surveillance and socio-economic issues
- Investigate outbreaks through collaborative field visits, joint protocols and activities. Disseminate the findings of outbreak investigations.

### Outcome 1.6: Improved preparedness and response capacity

While medium- to long-term plans for surveillance systems and capacity building are on going, there will be a need to respond to emergencies arising from outbreaks of infectious diseases. Accordingly, following key activities may be undertaken:

#### Key activities

- Strengthen preparedness and response systems compliant with the IHR (2005) and OIE standards
- Develop joint contingency and preparedness plans that include communication strategies
- Formulate policies and appropriate legislation to support quarantine and movement control, humane animal culling and compensation mechanisms
- Ensure availability of appropriate personal protective equipment and other equipment for infection control practices and outbreak investigation
- Establish health care facilities with adequate number of beds, ICU facilities, specialised human resource along with medicines, diagnostics and consumables as well as standard operating procedures for case management and infection prevention and control
- Institute mechanism for creating and mobilization of rapid deployment teams to respond to disease outbreaks
- Train personnel from all sectors at the national level who are nationally and internationally available at short notice to deal with disease emergencies
- Develop and implement communication strategies for longer-term behaviour change and changes in social norms to support prevention and response capacities, with benchmarks for monitoring and improving national communication capacity
- Address biosecurity needs to control the emergence and spread of infectious diseases
- Address disparities and social determinants of health that play a key role in disease transmission and health outcomes.

### Outcome 1.7: Implementation of evidence-based risk mitigation policies

Promoting activities and community empowerment to undertake protective activities shall be the cornerstone of minimizing transmission of infections. Following key activities are to be undertaken:

#### Key activities

- Identify nationwide health improvement and zoonoses prevention priorities and institute mechanisms for their implementation
- Engage multiple sectors to take actions to strengthen and implement zoonoses prevention policies in general public
- Improve and propagate practices that are driven by the best available evidence and knowledge
- Create social and physical environments that promote preventive practices
- Promote safe food and safe water in communities and animals to reduce prevalence of all infectious diseases
- Understand and address socio-economic impacts of zoonotic diseases on communities especially urban poor and rural communities
- Develop and implement Comprehensive Risk Communication Strategy to engage communities
- Undertake risk-analysis and chalk out mitigation strategies through application of artificial intelligence, wherever possible
- Encourage and support NGOs and community- based organizations in educating and creating awareness amongst people.

### **Outcome 1.8:** Innovations and R&D including strong regulatory framework

Basic and operational researches are important for the success of any programme. It is equally important in implementation of One Health. The key activities will be:

#### **Key activities**

- Prepare and implement a national research and development agenda on priority EID with key partners, including international agencies and leading national institutes as well as private pharmaceutical industries
- Enhance understanding of infection and transmission dynamics, ecology, and other drivers of origin and spread of zoonoses
- Ensure/promote sharing of data among human and animal health sectors
- Promote development and production of new generic tools for diagnosis, outbreak prevention, control and containment, including vaccines and therapeutics
- Undertake improved understanding of impacts and benefit–cost ratios of various interventions for surveillance and disease control options
- Promote research in all technical, socio-economic and environmental aspects of One Health especially public health emergencies, antimicrobial resistance and zoonotic infections
- Ascertain the dynamics of spread and the drivers of zoonoses and AMR
- Understand the mechanisms of emergence and selection of AMR and factors promoting these
- Evaluate the impact of use of antimicrobials in agriculture and fishery on human health.

### **Objective 2: Improved joint coordination and collaboration between major stakeholders in control of zoonoses**

#### **Outcome 2.1:** Communication between stakeholders on continuous basis

- Utilize the nationally coordinated formal system for implementing One Health activities as a platform for high level communication between major stakeholders
- Formalize continuous communication mechanism between different stakeholders to discuss their needs and experiences in context of One Health
- Develop and implement communication strategies for enhancing disease recognition and reporting at the local level
- Ensure through continuous dialogue process an effective long-term public-private partnership (PPP)
- Utilize effective communication between stakeholders at the field level including private-sector, field-level extension workers, farmer cooperatives, and general communities

#### **Outcome 2.2:** Effective partnerships and networks

- Develop a national strategic approach towards One Health with consensus of all stakeholders about their specific roles. Integrate concepts of One Health in ongoing health programs, where appropriate
- Establish and operationalize strong links between different ministries to address their shared needs in the context of One Health
- Provide adequate representation to private sector in the steering committee and advisory committees
- Strengthen and forge national networks on all aspects of One Health to harness country-wide expertise
- Strengthen ongoing inter-agency and inter-institutional collaboration at the national and field level
- Expand international partnerships with wildlife, environment groups and NGOs in risk assessment and management of zoonotic diseases
- Enhance mechanisms to promote cross-border and regional sharing of disease information, diagnosis and surveillance, and sharing of laboratory capacity
- Undertake joint risk assessment and recommend evidence based actions.

## National Framework for One Health

### Outcome 2.3: Improved information systems and research capacity

- Promote collaborative research across the sectors for understanding dynamics at interface of human-animal-environment and utilize the outcomes to strengthen all the sectors
- Develop a multi-sectoral health information system that captures critical actionable elements from all major sectors
- Undertake, within the national research agenda, multi-institutional research activities with participation of leading institutes from human health, animal health and environment sectors for cross-fertilization of ideas and generation of appropriate solutions for efficient implementation of One Health
- Strengthen networks of national institutions for the analysis of risk and support for research in epidemiology and generation of diagnostics and vaccines
- Establish nation-wide linkages and integration among information systems.

### Outcome 2.4: Active community and civil society engagement

The Framework gives primacy to the prevention of disease emergence and spread through dialogue, participation and community ownership of interventions.

#### Key activities

- Develop a systematic, socially-compatible and locally-relevant approach through comprehensive risk communication strategy that encompasses diversity in culture, social norms, educational status, language, faiths and beliefs
- Ensure that the strategy systematically addresses the multi-sectoral, multi-dimensional risks and impacts of zoonoses especially pandemics, and devise communication tools to promote their prevention and response
- Ensure participation of the public and the community in planning, prioritizing and decision-making, in responding to threats of zoonoses
- Increase public awareness and understanding of the determinants of health, disease, and disability especially zoonoses and AMR; and disseminate appropriate, doable public health actions
- Inform communities about improved biosecurity measures, community-based surveillance of new and emerging diseases, and timely and responsive reporting
- Promote community interaction of those NGOs and community-based organizations that are already engaged around public and animal health issues
- Collaborate with NGOs and local opinion leaders and encourage the role of NGOs in community awareness and targeted education
- Conduct educational campaigns on hygiene and non-pharmaceutical practices
- Collaborate with the mass media to create awareness and make efficient use of social media to disseminate correct information.

### Outcome 2.5: Effective international engagement

- Strengthen the tripartite collaboration to make the country's One Health strategy in alignment with the global action plan on AMR/zoonotic diseases
- Seek technical assistance from UN agencies and international organizations especially OIE, FAO, UNEP and WHO to improve/amend infrastructure to be compatible with basic tenets of prevent, detect, respond and recover from public health emergencies
- Seek support and cooperation from international development partners (World Bank, Asian Development Bank, JBIC, USAID, CDC) to augment technical and financial resources
- Obtain access to international expertise in building national capacity through technical material and training activities
- Promote sharing of experiences with other countries, especially the neighbouring countries with shared land borders for common learning
- Harmonize strategies and approaches for EID, AMR and zoonoses across countries in regions with similar problems and challenges.
- Advocate use of One Health approach in regional political platforms viz. SAARC, ASEAN
- Join existing or potential international networks.





6

**M&E programme,  
targets and indicators**



## 6 M&E programme, targets and indicators

Monitoring and evaluation is an integral part of the programme and need to be developed meticulously. Appropriate indicators are to be designed to measure the progress from the baseline towards the target in a time bound manner (Table 9). It is essential that indicators are SMART and limited in number for giving an overview of progress and to initiate mid-course corrections, if needed. Some suggested indicators are given below:

**Table 9: Suggested indicators for One Health programme**

Baseline (Year)	Indicator	Target (Year)	Frequency	Data source & type
No National Steering Committee	Is National steering Committee Established	National steering Committee Established	Once	Govt Notification
No Technical advisory Committee	Number of technical advisory committees functional	At least five technical advisory committees formed	Annual	Govt Notification
No national focal point on One Health	Number of Ministry specific national focal points designated	At least three national focal points designated	Annual	Govt
No operational guidelines for One Health implementation available	Is a comprehensive strategic document on operations of One Health available	A comprehensive strategic document on operations of One Health available	Annual	Document available
One Health not incorporated in legislations and regulations	Is One Health incorporated in legislations and regulations	One Health incorporated in legislations and regulations	Annual	Document available
No JEE or PVS undertaken	Is JEE or PVS undertaken in the country	JEE and PVS undertaken in the country	Annual	JEE and PVS available
No joint M&E tool developed for One Health activities	Has joint M&E tool developed for One Health activities	Joint M&E tool developed for One Health activities	Annual	M&E tool available
No State Governments are on-board to implement One Health activities	Number of States/UTs on-board to implement One Health activities	All States/UTs on-board to implement One Health activities	Annual	Formal communication received from States/UTs
<5% professional staff are from other One Health participating ministries	% of professional staff who are from other One Health participating ministries/sectors	At least 5% of professional staff are from other One Health participating ministries/sectors	Annual	Ministry specific HR report
None of professional staff has been trained/oriented in One Health	% of professional staff that has been trained/oriented in One Health	At least 25% of professional staff are trained/oriented annually in One Health	Annual	Ministry specific report

## National Framework for One Health

Baseline (Year)	Indicator	Target (Year)	Frequency	Data source & type
No joint training courses organized on One Health	Number of joint training courses organized on One Health	At least 12 joint training courses for professionals from major sectors on One Health	Annual	Training reports
No joint implementable project on One Health	Number of joint implementable project on One Health initiated	At least 10 joint implementable projects on One Health initiated	Annual	Project reports
No Joint surveillance for emerging infectious diseases undertaken	Number of joint surveillance activities for emerging infectious diseases or AMR undertaken	At least 10 joint surveillance for emerging infectious diseases and AMR undertaken	Annual	Surveillance data reports
No joint investigation for outbreaks of emerging infectious diseases undertaken	Percent of joint investigations for outbreaks of emerging infectious diseases undertaken	At least 50% of outbreaks of emerging infectious diseases jointly investigated	Annual	Outbreak reports
No of diseases for which lab infrastructure is shared with another sector	No of diseases for which lab infrastructure is shared with another sector	At least five diseases for which lab infrastructure is shared	Annual	Lab reports
No formation of multi-sectoral response teams	Number of multi-sectoral response teams trained	At least 10 multi-sectoral response teams trained	Annual	Coordinates of teams reported
No joint multi-sectoral research projects	Number of joint multi-sectoral research projects initiated	At least 10 joint multi-sectoral research projects initiated	Annual	Research proposals
No joint multi-sectoral review meeting	Number of joint multi-sectoral review meetings	At least 3 multi-sectoral review meetings in a year	Annual	Meeting reports
No joint strategy for risk communication to public and farmers	Is a joint strategy for risk communication to public and farmers developed	Joint strategy for risk communication to public and farmers developed	Annual	Strategy document

7

## Conclusions



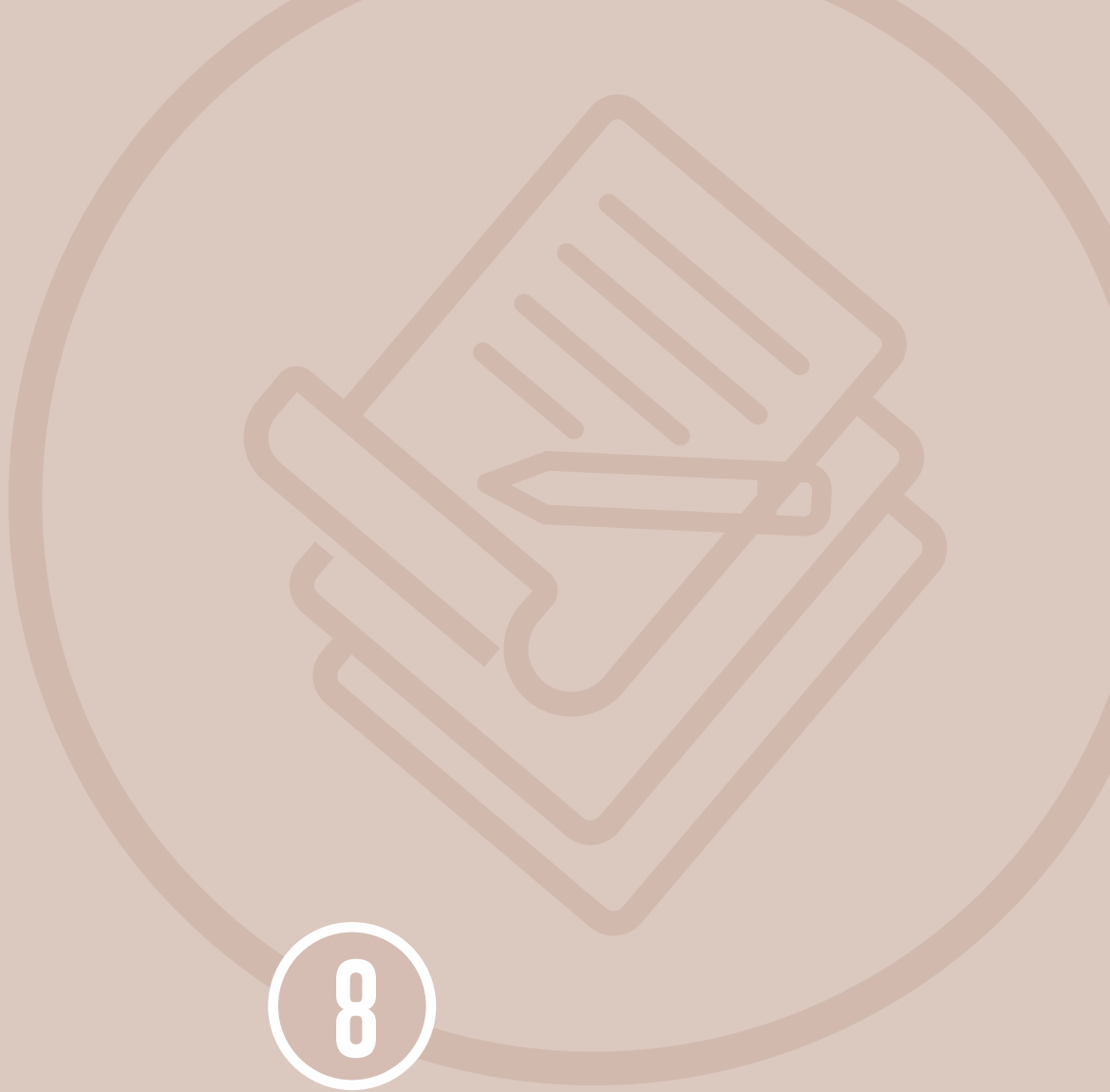


## 7 Conclusions

Recent major disease events—especially COVID-19 pandemic—demonstrate close human-animal-environment health links. Current wide-scale environmental degradation is putting increasing pressure on both human and animal populations and reducing resilience, including risk of emerging infections and greater vulnerability to known diseases and unknown pathogens especially wildlife viruses.

In addition to the direct burden on health, endemic and emerging diseases can have wide-ranging impacts on local and global economies and social dynamics, affecting a range of development priorities (e.g., agriculture, education, nutrition). Countries require strong, resilient public health systems at the human-animal-environment interface to address these existing and future threats to human and animal health. One Health approach is the validated logical approach to counter such threats.

This document provides guidance on development of activities for One Health at the country and peripheral levels and this framework can be utilized in developing country-specific One Health approach to mitigate the impact of several catastrophic events on human and animal health and on the health of the planet, is thus facilitating accelerated human development.



8

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9

# Annexes





# 9 Annexes

## Annex 1: Useful resources

### Tripartite Guide

World Health Organization (WHO), Food and Agriculture Organization of the United Nations (FAO) and World Organisation for Animal Health (OIE), 2019. Taking a Multi-sectoral, One Health Approach: A Tripartite Guide to Addressing Zoonotic Diseases in Countries.

<http://www.fao.org/3/ca2942en/ca2942en.pdf>

### Regulatory Frameworks

WHO International Health Regulation (2005)

<https://www.who.int/publications/i/item/9789241580496>

OIE Terrestrial and Aquatic Animal Health Codes and Manuals

<https://www.bing.com/search?q=OIE+Terrestrial+and+Aquatic+Animal+Health+Codes+and+Manuals&cvid=5fbb9f226b5d42d0be93d96816392d9d&pglt=547&FORM=ANNTA1&PC=LCTS>

Convention on Biological Diversity

<https://www.cbd.int/#:~:text=In%20its%20decision%2014%2F34%20the%20Conference%20of%20the,11.12.2019%20The%20nature%20that%20surrounds%20us%2C%20sustains%20us.>

Framework Convention on Climate Change

<https://unfccc.int/process-and-meetings/the-convention/what-is-the-united-nations-framework-convention-on-climate-change>

Convention on International Trade in Endangered Species of Wild Fauna and Flora

<https://cites.org/eng/disc/text.php>

FAO and WHO. Codex Alimentarius

<http://www.fao.org/fao-who-codexalimentarius/en/>

Sendai Framework for Disaster Risk Reduction

<https://www.undrr.org/implementing-sendai-framework/what-sendai-framework>

### Capacity Assessments

WHO. Joint External Evaluation for the IHR Monitoring and Evaluation Framework

[https://www.who.int/ihr/publications/WHO\\_HSE\\_GCR\\_2016\\_2/en/](https://www.who.int/ihr/publications/WHO_HSE_GCR_2016_2/en/)

OIE. Performance of Veterinary Services, tool to establish level of performance in Veterinary Services

[https://www.oie.int/fileadmin/Home/eng/Support\\_to\\_OIE\\_Members/docs/pdf/2019\\_PVS\\_Tool\\_FINAL.pdf](https://www.oie.int/fileadmin/Home/eng/Support_to_OIE_Members/docs/pdf/2019_PVS_Tool_FINAL.pdf)

Global Financing Facility : <https://www.globalfinancingfacility.org/>

OIE. World Animal Health and Welfare Fund

[https://www.oie.int/fileadmin/Home/eng/About\\_us/docs/pdf/basic\\_text/80%20SG19\\_basictexts\\_ANG%20part%208.pdf](https://www.oie.int/fileadmin/Home/eng/About_us/docs/pdf/basic_text/80%20SG19_basictexts_ANG%20part%208.pdf)

Global Environment Facility

<https://www.bing.com/search?q=Global+Environment+Facility&cvid=c75a4f90500b4415b5f03bacf0b86081&pglt=547&FORM=ANNTA1&PC=LCTS>

## **National Framework for One Health**

OIE. World Animal Health Information System (WAHIS)

[https://www.oie.int/wahis\\_2/public/wahid.php/Wahidhome/Home](https://www.oie.int/wahis_2/public/wahid.php/Wahidhome/Home)

FAO-OIE-WHO. Global Early Warning System (GLEWS): <http://www.glews.net/>

UNISDR. DesInventar: <https://www.desinventar.net/>

UNISDR. Sendai Monitor: <https://sendaimonitortraining.undrr.org/>

ProMED Mail: <https://promedmail.org/>

FAO Tools for assessment:

- [http://www.fao.org/ag/againfo/programmes/en/empres/tools\\_SET.html](http://www.fao.org/ag/againfo/programmes/en/empres/tools_SET.html)
- <http://www.fao.org/3/a-i5439e.pdf>
- <http://www.fao.org/antimicrobial-resistance/resources/tools/fao-atlass/en/>
- <http://www.fao.org/3/a-i4386e.pdf>

## **Regional networks**

The One Health Network South Asia comprising Bangladesh, Bhutan, India, Sri Lanka, Nepal, Pakistan, and Afghanistan. <http://www.onehealthnetwork.asia>

## **Risk assessment**

WHO's Strategic Tool for Assessing Health Risks (STAR) can also help countries identify and prioritize hazards to support health emergency planning, and targeted guidance is available for risk assessment and management on a range of One Health-relevant topics [https://www.who.int/ipcs/methods/harmonization/areas/ra\\_toolkit/en/](https://www.who.int/ipcs/methods/harmonization/areas/ra_toolkit/en/)

## **National Plans**

Caribbean One Health Strategic Framework 2017-2023

## **Economics of One Health**

<https://openknowledge.worldbank.org/handle/10986/11892>

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