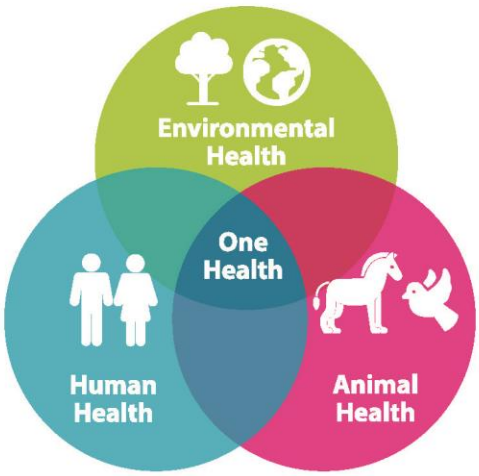


World Health Organization
Egypt

Food and Agriculture Organization of the United Nations

" Despite the crises and challenges facing the entire world, we are able, with the help of God, to overcome all these challenges through the cohesion and solidarity of the great Egyptian people and all their institutions.

Egypt is a great nation deeply rooted in history and it is the cradle of civilization. It is our nation which we pledged together to sacrifice our souls to protect it, build it with our own hands, instill hope in it and create a future for it "

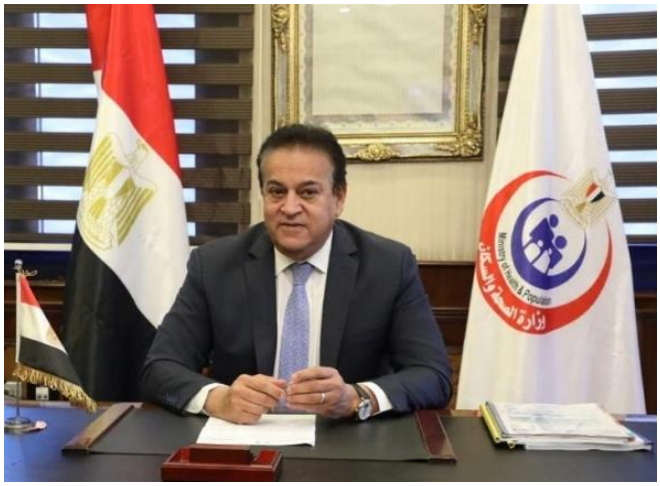
President of Arab Republic of Egypt
His Excellency President

Abdel Fattah El-Sisi

" Arab Republic of Egypt adopts an integrated vision that underlines the importance of health sector development and achieving its tangible significant transformation in order to provide the best medical services to the Egyptian citizen "

Prime Minister

Dr. Mostafa Madbouly



In view of the directives of His Excellency the President of the Republic to provide a decent life for all Egyptians in various aspects that impact citizens' life, notably health, the Ministry of Health and Population, in cooperation with the Ministry of Agriculture and Land Reclamation, the Ministry of Environment and other partners, has endeavored to adopt various strategic approaches to support this vision.

Given that one of the lessons learned from COVID-19 pandemic, taking into consideration the accelerating climate change and its negative impact on different health sectors, is the need to develop integrated national plans that ensure an immediate coordinated response to public health emergencies.

Therefore, as Egypt chairs the 27th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP27) in 2022, we have noted the necessity to progress towards operationalizing the concept of One Health to address such challenges that threaten public health.

Adopting the concept of One Health contributes to strengthening health systems, which in turn, assists in achieving optimal health outcomes for humans, considering that it entails preserving animal and plant health, as well as improving environmental health.

Based on this established fact that human, animal, and plant health cannot be apart from their living environments, unilateral efforts will not be sufficient to deal with many health challenges, whether zoonoses, antimicrobial resistance, food and water safety or climate change. Close communication, coordination and cooperation between all relevant authorities are necessary to ensure the achievement of public health goals.

This "One Health National Strategic Framework" serves as a roadmap for enhancing multisectoral and multidisciplinary cooperation at all national levels and supporting efforts to integrate the "One Health" approach into various health strategies, plans and programs.

Therefore, I would like to urge you all to move forward in operationalizing this strategic framework and work towards developing an operational action plan that guarantees its implementation to achieve our goal of providing a decent and healthy life for every Egyptian citizen, and to protect our beloved country, Egypt, from any health threats.

Minister of Health and Population

Prof. Dr. Khaled AbdelGhaffar

The most prominent challenges, which faced the world in the near past is the emergence of coronavirus (COVID-19), which has proven beyond any doubt that the strength of any country lies in the unity of all its operating systems, whether those related to human, animal, plant, or environmental health, under one umbrella that is now referred to as the "One Health" system or approach.

One of the most important topics that falls under the "One Health" system is climate change and its impact that contributes to epidemiological change, aggravates the virulence of some diseases, causes the resurgence of diseases that had long gone and the emergence of novel diseases that did not exist before, most notably, COVID-19. In addition, it increases the possibility of the emergence of transboundary epidemic diseases. It also leads to genetic mutations in many microbes, which are among the most serious challenges facing the world. Moreover, it stands behind the emergence of some phenomena that have not been rapidly prevailing in the past as observed in the last decade, namely, antimicrobial resistance.

The Ministry of Agriculture's future vision can be highlighted in terms of the need to achieve solidarity between all concerned parties and common stakeholders to develop various epidemiological studies, researches and surveys that aim at early detection of public health threats, as well as leveraging cooperation with international organizations in terms of using modern technology for early diagnosis of epidemic diseases, and massive data collection and analysis that include binding factors and identification of risks in humans, animals and plants alike.

In this context, I would like to pay tribute to the efforts exerted by the four main partners; the Food and Agriculture Organization (FAO), the World Organization for Animal Health (WOAH), the World Health Organization (WHO) and the United Nations Environment Program (UNEP), for working very hard to promote the "One Health" approach.

Minister of Agriculture and Land Reclamation

Prof. Dr. El-Sayed El-Quseir

Arab Republic of Egypt is rapidly striving to integrate the environmental dimension into all state sectors with an aim to achieve rational use of natural resources, sustainable development, and the just transition to a green economy. This reinforces the importance of investing in the environment along with creating and providing job opportunities, but at the same time conserving the environment's natural resources and reducing the sources of pollution that affect the environment, human, and animal's health.

The "One Health National Strategic Framework" is based on the interconnectedness between humans, animals, and the environment, and adopts practices that support more effective, efficient, sustainable, coordinated, and collective action among different state sectors.

It is also considered a firm basis for implementing global commitments of protecting nature and biodiversity and fighting climate change, environmental pollution, and waste, which contribute to our planet's recovery.

Egypt's Vision 2030 gives great importance to addressing the effects of climate change through an integrated and sustainable environmental system that promotes resilience and response to natural hazards.

Thus, we all strive to protect and conserve the environment by taking all necessary measures, preventing its harm and the more by striving to develop it to guarantee future generations' right as well as protecting the Egyptian citizens' health and asserting their right to live in a healthy, clean, and sustainable environment.

Minister of Environment

Prof. Dr. Yasmine Fouad

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Acknowledgment

This document is the result of collaborative effort between representatives of the ministries and authorities concerned with One Health, namely the Ministry of Health and Population, the Ministry of Agriculture and Land Reclamation, Ministry of Environment, Ministry of Higher Education and Scientific Research, Ministry of Local Development, the National Food Safety Authority, the Egyptian Drug Authority, in partnership with the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), and the World Organization for Animal Health (WOAH).

Many thanks to all participants for their immense efforts and hard work to support the National Strategic Framework for One Health Initiative to achieve the progress to which we all aspire for our beloved country Egypt.

Abbreviations

AMR	Antimicrobial Resistance
AHRI	Animal Health Research Institute
CPHL	Central Public Health Laboratories
ECTAD	Emergency Centre for Transboundary Animal Diseases
EDA	Egyptian Drug Authority
EMRO	Eastern Mediterranean Regional Office (World Health Organization)
FAO	Food and Agriculture Organization
GOVS	General Organization of Veterinary Services
GIS	Geographic Information System
JRA	Joint Risk Assessment
MOALR	Ministry of Agriculture and Land Reclamation
MOHP	Ministry of Health and Population
MOE	Ministry of Environment
MOU	Memorandum of Understand
NFSA	National Food Safety Authority
OHJPA	One Health Joint Plan of Action
OHZDP	One Health Zoonotic Disease Prioritization
RVF	Rift Valley Fever
SDGs	Sustained Developmental goals
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
WHO	World Health Organization
WOAH	World Organization of Animal Health

Introduction

The concept of One Health has recently captured the attention of the world due to the existence of many weaknesses and gaps in separate surveillance and control systems by the relevant ministries and authorities. The concept of One Health focuses on the fact that human health is linked to the health of animals, plants, and the surrounding environment. It is necessary to cooperate closely between the various stakeholders in maintaining the health of humans, animals, plants, and the environment, especially with regard to reducing the impact of zoonotic diseases and reducing the risks resulting from antimicrobial resistance (AMR), as well as ensuring the safety of food, water and other joint issues.

The COVID-19 Pandemic has brought attention not only to the importance of early detection, risk assessment and effective response to any threats to the global health security, but also to the importance of strengthening One Health strategies and action plans.

One Health is a collaborative, multi-sectoral and multidisciplinary approach that encompasses all national, regional, and global levels and aims to achieve optimal human health outcomes, considering the

preservation of animal and plant health and improvement of environmental health.

In addition, One Health focuses on investing in health research and the setting-up and implementation of multi sectorial programs, policies, and legislation to address the health threats facing humans, animals, plants, and the environment and to develop new and improved concepts to produce viable and long-lasting solutions.

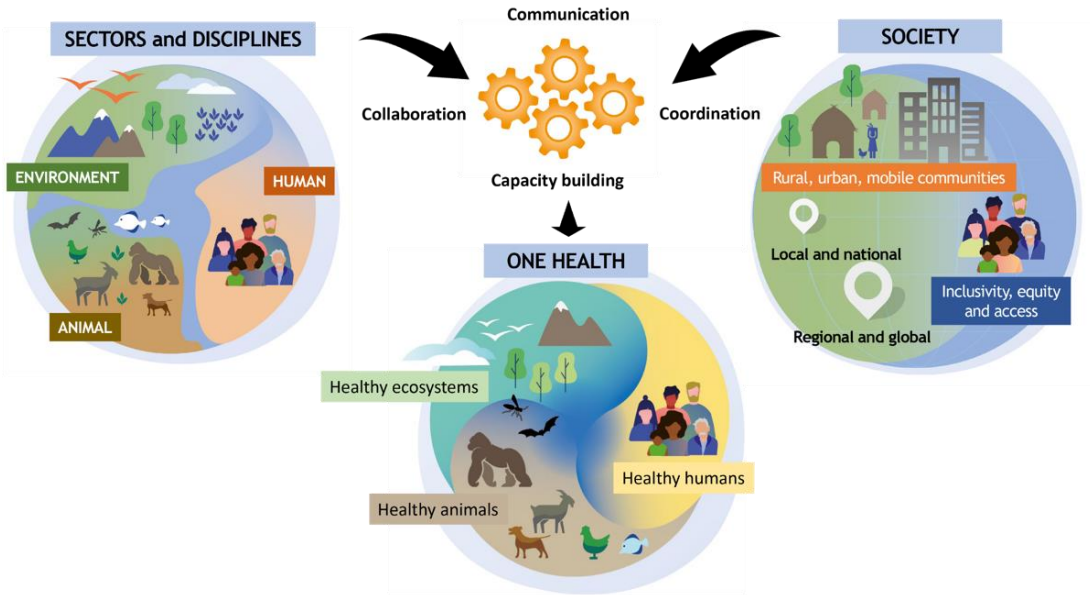

Figure 1: Key Components of One Health Approach

The objectives of the comprehensive and unified approach known as "One Health", include achieving a sustainable balance between all components of ecosystems that help improve human, animal, plant, and environmental health. It recognizes the close interdependence and mutual impact between human, animal, plant, and the environment health. Also, it tackles the necessity for safe and nutritious food, clean water, energy, and air, as well as initiating actions to reduce climate crises and its negative impacts. This will promote well-being of all, achieve sustainable development goals (SDGs) and combat threats to global health security and ecosystems.

Joint Global Planning for One Health

The Quadripartite Partnership for One Health brings together the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (WOAH) and the United Nations Environment Program (UNEP) to collaborate to accelerate the harmonized strategy on human, animal, and ecosystem health through several joint initiatives.

One Health Joint Plan of Action (OHJPA) 2022 – 2026, is the most important initiative, which includes six interdependent action tracks that address the main health challenges facing humans, animals, and their environment. These tracks are enhancing One Health capacities to strengthen health systems, reducing the risks from emerging and re-emerging zoonotic epidemics and pandemics, controlling and eliminating endemic zoonotic, neglected tropical and vector-borne diseases, strengthening the assessment, management and communication of food safety risks, curbing the silent pandemic of AMR, and integrating the environment into One Health.

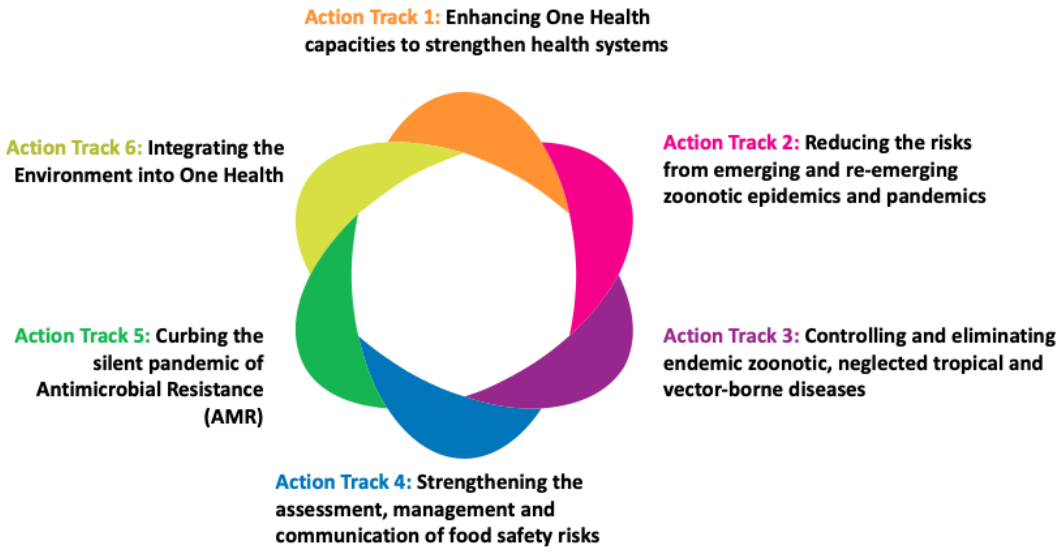

Figure 2: Action tracks - One Health Joint Plan of Action (OHJPA) 2022-2026

The OHJPA aims to guide the four organizations to collaborate in achieving the main goal of supporting governments building One Health capacities that can address complex multidimensional health risks. The plan provides a framework of action in addition to a proposal for activities that governments can implement in collaboration with the four organizations, leading to promoting and scaling up One Health in a sustainable manner. The plan uses the One Health approach to ensure equal collaboration, communication, and coordination among all sectors responsible for addressing any health risks to human, animal, plant, and the environment while providing

appropriate guidance and tools for the effective implementation of the One Health approach.

Regarding risk reduction and minimizing impacts of zoonotic epidemics, the OHJPA supports understanding the links and risk factors leading to the emergence and spread of these diseases, along with strengthening the first line of defense for prevention at the animal level, through adopting effective surveillance, early warning, and rapid response systems. This helps reduction of the burden of zoonotic diseases, neglected tropical diseases and vector-borne diseases. The joint plan also supports countries in implementing community and/or risk-based solutions, strengthen policy and legal frameworks on the local and the global level, and increase political commitment and investment.

This global trend also works towards changing policies to facilitate multi sectorial coordinated actions and promote awareness for responsible and rational use of antimicrobials in humans and animals to preserve the efficacy of antimicrobials and safeguard sustainability and equitable access to them. Moreover, it focuses on protecting and restoring biodiversity, preventing the degradation of ecosystems, and on a broader level supporting sustainable development.

In December 2021, a high-level committee of international experts in the field of health was established, which is considered one of the important initiatives recently undertaken by the quadripartite partnership. The committee is formed of 26 members and serves as an advisory committee for the four organizations within the context of One Health. Since then, the committee has developed a theory of change to guide the implementation of One Health approach and has updated the concept of One Health to include an environment pillar in addition to human, animal, and plant. At the regional level, the WHO Office for the Eastern Mediterranean Region (EMRO), has collaborated with the regional offices of the FAO, the WOAH, and the UNEP, to develop the One Health operational framework for action for the Eastern Mediterranean Region, taking into account variations that may exist between countries in terms of the level of capacities, implementation status and resources availability.

The operational framework includes seven components including governance and leadership to ensure that a system is in place to facilitate policy-making, strategic planning necessary for the implementation of the One Health approach, enhance the coordination among various relevant sectors, strengthen surveillance, facilitate data and information sharing, support preparedness and

response system, and improve capacities of workforce from various disciplines to carry out activities related to One Health in countries.

In addition, the WHO, in collaboration with FAO, provides technical support needed for countries in the region, mainly assisting them in developing strategies and plans that are in line with their national context, providing several training programs for their workforce on the latest tools available in the field of One Health, such as in joint risk assessment of common diseases training, as well as providing technical support to evaluate and improve inter-sectoral programs such as joint surveillance for zoonotic diseases and to develop a list of priority diseases at the human-animal-environment interface so that countries can make the best use of the available resources to reduce the burden of such diseases on its health systems.

National context and priorities

One Health and Governance

The Egyptian government has made efforts in establishing coordination mechanisms between different sectors concerned with human health, animal health and the environment as well as other relevant sectors in recent years. Over the past ten years, the relevant ministries have supported many activities to strengthen and support the governance of the One Health mechanism and sought to establish a clear strategic framework to guide it.

The core of these activities was the formation of the "4-Way Link" committee to follow up on the efforts of the country in the field of surveillance and control of avian influenza. Regular meetings were held between epidemiologists and Laboratory specialists from the preventive sector at Ministry of Health and Population (MOHP) including Department of Epidemiology and Surveillance and Communicable Diseases Control Department in addition to the Central Public Health laboratories (CPHL), and on the other hand, from the Ministry of Agriculture and Land Reclamation (MOALR) the participating sectors included the Central Directorate for preventive medicine and the Surveillance Department at the General Organization of Veterinary Services (GOVS), and the Animal Health Research Institute (AHRI). In addition to representatives from WHO

country office in Egypt, and the Emergency Centre for Transboundary Animal Diseases (ECTAD) at FAO Egypt.

The "4-Way Link" meetings focused on the discussion of a range of interdependent issues, most important of which were the exchange of data and information and conducting risk assessment of the highly virulent avian influenza situation. It has also worked efficiently as a formal technical team supporting political decision-making processes related to zoonotic influenza viruses. This committee is considered the first technical committee to adopt the concept of One Health in Egypt. These efforts were supported by the Egyptian government through issuing the Prime Minister's Decree No. 101 of 2015 to officially declare the formulation of the Supreme National Committee to follow up the epidemiological situation of avian influenza.

As the epidemiological situation changed and emerging diseases continues to change regionally and globally, this necessitated the expansion of the "4-Way Link" committee to include other emerging diseases, such as the Middle East respiratory syndrome coronavirus (MERS-CoV) and other priority zoonotic diseases such as brucella, rabies and Rift Valley fever (RVF).

It was proposed to establish the Supreme Committee for One Health in Egypt as an extension of this framework, along with considering a proposal to amend the Prime Minister's Decree No. 101 of 2015 to

include follow-up of other zoonotic diseases in addition to addressing the status of antibiotic-resistant microbes, but the efforts to complete this proposal was halted due to the COVID-19 pandemic.

However, the COVID-19 pandemic has led to establishing Law No. 152 of 2021 for measures to address health epidemics and pandemics allowing the government to take all necessary precautions and actions to respond to epidemics or pandemics.

Under the supervision of the Cabinet, MOHP called on all national and international stakeholders in the relevant authorities to assign focal points to work on drafting this National One Health Strategic Framework to be announced coinciding with Egypt's presidency of the twenty-seventh Conference of Parties (COP27) of the United Nations Framework Convention on Climate Change (UNFCCC). The main stakeholders involved were the Ministry of Agriculture and Land Reclamation (MOALR), the Ministry of Environment (MOE), the Ministry of Higher Education and Scientific Research, the Ministry of Local Development, the Egyptian Drug Authority (EDA) and the National Food Safety Authority (NFSA), in collaboration with WHO and FAO.

It is worth to note that the major challenges facing the implementation of the One Health approach in Egypt are the lack of institutional mechanisms in management, absence of framework for

coordination and cooperation between stakeholders, in addition to duplication of efforts sometimes due to the overlap between stakeholders involved in the same area.

Zoonotic Diseases

Zoonotic diseases are diseases that can be transmitted from animals to humans, with more than 200 known types. It is estimated that out of every five known communicable diseases in humans, more than three of them can be transmitted from animals, leading to a large proportion of emerging diseases affecting humans to be of zoonotic origin.

Beside being a problem that threatens human health, many zoonotic diseases lead to direct and indirect economic losses as they affect the production of food of animal origin and thus reduce animal protein per capita and create obstacles to international trade in animal products. However, it should be noted that some zoonotic diseases are preventable by vaccination or other preventive measures.

Collaborative efforts were made by different stakeholders, including the Preventive Sector at MOHP, GOVS at MOALR and MOE to prioritize the zoonotic diseases based on a set of scientific foundations and previous combined experience in this field. Among the determinants on which the prioritization was based is the incidence

and death rates associated with these diseases, the infection rate, the impact on the livestock sector, and the capacity for veterinary interventions to control these diseases.

Surveillance and control of priority zoonotic diseases including avian influenza, rabies, brucellosis and RVF shows different examples of joint coordination activities that have been carried out through a One Health approach with the aim to reduce the morbidity and mortality of these diseases, such as formulation of protocols and guidelines for surveillance, control and prevention, strengthening joint surveillance and facilitating exchange of data and information, as well as joint field visits to respond effectively to health emergencies. In addition to capacity building trainings, seminars and workshops that are done through collaboration between different stakeholders.

Regarding avian influenza in particular, coordination efforts between different parties were strengthened in conjunction with the response to the 2009 influenza pandemic and culminated in the formation of the "4-Way Link" committee to follow up on efforts in the field of avian influenza surveillance and control. In addition to the formation of the Supreme National Committee to monitor the avian influenza situation.

For Rabies, a national strategy has been formulated to eliminate Rabies by 2030, which comes in line with SDGs, and its final draft has

been finalized and technically approved during the celebration of World Rabies Day 2021.

A workshop was conducted in collaboration with country offices of both WHO and FAO to support national technical officers working in the field of surveillance and control of zoonotic diseases in updating the list of priority diseases on the national level. “One Health Zoonotic Disease Prioritization - OHZDP" was attended by representatives from the Preventive Sector at MOHP, GOVS and AHRI at MOALR as well as representatives from MOE.

These entities also cooperated in the preparation and implementation of the Joint Risk Assessment (JRA) of zoonotic diseases workshop which was conducted on a central level to strengthen the skills and knowledge of technical officers in conducting risk assessment of zoonotic diseases, this was followed by another training in two governorates on joint risk assessment of avian influenza disease as a pilot to ensure the ability of workforce from different disciplines to assess joint risks.

Despite this progress in the areas of surveillance and control of zoonotic diseases, we still need to join forces within the context of One Health to complement the successes achieved during the past period.

Vector-Borne Diseases

MOHP through the department of vector control, carries out control measures for mosquitoes, creeping insects, fleas, and rodents, that can transmit many zoonotic diseases to safely reduce the density of such vectors leading to control of disease spread and prevent outbreaks.

Effective control plans are carried out by professional teams using different pesticides that are authorized by the WHO and registered by EDA. The MOHP also cooperates with other relevant ministries, including MOALR, MOE, Ministry of Water Resources and Irrigation and Ministry of Local Development through the Higher Committee for Integrated Control established in accordance with Ministerial Decree No. 2 of 2005.

The main responsibilities of this committee are to supervise activities related to disinfection of water canals, disposal of solid waste generated from disinfection, backfilling of ponds and swamps, vector control campaigns, and exchanging data and information on the active substances used to avoid insect resistance.

Moreover, an entomological map of disease vectors in Egypt has been created using the Geographic Information System (GIS) which is updated every two years, in addition to RVF PCR testing for mosquito samples collected from all governorates.

These efforts are complemented by the activities conducted by the GOVS at MOALR such as animal vaccination campaigns held in all governorates, surveillance plans and epidemiological surveys for the early detection of any pathological infections among animals, in addition to the inspection of imported animals and the activation of the necessary preventive measures in veterinary quarantine by testing samples and providing immunization as necessary to ensure that imported animals are free of diseases before allowing them to enter the country.

One of the most important achievements in the field of vector-borne diseases is acquiring the certificate denoting Egypt free of lymphatic filariasis in 2017, as well as the absence of malaria cases since 1998 (all cases are imported).

However, due to the unauthorized activities of some private companies in vector control and the absence of some legislation required to permit adequate supervision over those companies, as well as the excessive and inappropriate use of agricultural pesticides, which may pose a risk to the control and elimination of these diseases in the future, especially with the plausible effects of climate change, where insects may acquire or produce generations of insects that are resistant to pesticides used.

Food and Water Safety

Different ministries and institutions have worked together to overcome the challenges facing food safety and security by developing the necessary policies and programs for food safety and food control systems and enhance risk analysis, assessment, and improving early warning, detection and response systems to food related outbreaks or threats.

The main stakeholders involved are MOHP, MOALR, Ministry of Supply and Internal Trade, Ministry of Interior as well as NFSA and several other relevant institutions. All stakeholders work together to address food safety, and food related threats under the umbrella of One Health.

The Egyptian Government has taken successful steps towards the establishment of the NFSA in 2017 which works to guarantee that food safety requirements are met to protect human health and reduce foodborne diseases, maintain a strong food regulation system, as well as secure food sustainability and safeguard food security. The authority's law and executive regulations have been issued to support the coordination with relevant stakeholders including MOHP, MOALR, MOE, and other concerned entities. All stakeholders are represented in the authority's board of directors and board of trustees, allowing establishing protocols with relevant concerned partners, and

contracting with governmental laboratories affiliated to both MOHP and MOALR, and help establishing laboratories at different Egyptian ports to strengthen national food control systems and reduce any risks associated with food.

In addition to the efforts of MOHP in the field of food safety, it also plays an active role in the implementation of water safety plans by regularly withdrawing water samples from drinking water stations in all governorates and send them for testing at the CPHL to ensure their conformity with drinking water standards. This supports regular monitoring of water suppliers, improves the implementation of water safety plans, and helps prevent water-borne disease.

Also, a National Strategy for Food and Nutrition (2022-2030) has been launched, which is in line with Egypt's vision 2030 and the SDGs. It is another example of the multi-sectorial effort done by all relevant stakeholders. The proposed strategy aims to enable access to healthy, safe, sustainable, and affordable diet through a resilient food system and create an integrated, high-quality, and universal health care system that supports nutrition improvement by delivering essential nutrition services throughout the life cycle, by 2030.

As a continuation of the efforts invested in the field of food and water safety, we need to provide extra support to the workforce, enhance the exchange of data, information, and experiences, ensure adherence

to laws and policies, and encourage coordination between universities and other sectors concerned with research projects and discuss possible ways to get results published.

Antimicrobial Resistance (AMR)

The improper use of antimicrobials leads to the development of resistance worldwide, as at least half of the available antibiotics are used incorrectly. Unnecessary and inappropriate consumption rates in both public and animal health are the leading cause of antimicrobial resistance, which in turn poses a threat to both public and animal health.

It should be noted that information on AMR is limited in most low- and middle-income countries where irrational use of antibiotics is still common in various public or private sectors, in addition to weak information-sharing mechanisms between different partners.

The National Action Plan for Antimicrobial Resistance 2018-2022 has been issued defining the roles and responsibilities of various activities to be undertaken by all entities to work in reducing AMR, setting a specific timeframe for implementation including a follow-up and evaluation plan to track progress. This plan was drafted jointly by the preventive sector at MOHP, the GOVS at MOALR, MOE and with the help of experts from various Egyptian universities.

In the same context, the Egyptian Drug Authority (EDA), established by Law No. 151 of 2019, replaced different authorities in the field of supervising and controlling use of human and veterinary pharmaceuticals, medical supplies, and other related products. The EDA regulates the registration, and use of pharmaceutical preparations and ingredient materials used in their manufacture.

The EDA works closely with different ministries and agencies, to enforce strategic plans, establish regulatory frameworks, issue policies and manuals. Moreover, EDA contributes to drug education efforts to raise the level of technical performance of health service providers, as well as community awareness regarding the severity of AMR and ways to reduce it, and to ensure the rational use of antimicrobials. The EDA also monitors the national consumption rates of antimicrobials and analyses patterns of use according to varied reasons.

A regulatory framework called the National Committee for the Rationalization of the Use of Antimicrobials was established in December 2021 which is a multi-stakeholder committee responsible for developing national policies and protocols for the rational use of antimicrobials and to follow up their implementation.

Exploring opportunities for integrating health surveillance into antimicrobial consumption rates detection at both the human and

animal aspects within the One Health approach is critical for the early detection of potential health threats related to AMR. There is also an urgent need for a stable mechanism for timely information-sharing across sectors to exchange alerts and guide risk assessments.

One Health and the Environment

Egypt's updated vision 2030 states that the human being is the focus of development as one of the governing principles of the strategy. Based on this principle, the importance of protecting citizens from the negative health effects of climate change is evident, especially during the recovery from the COVID-19 pandemic, which has taught us how important it is to prepare for health emergencies and unite efforts in various relevant sectors to try to manage any upcoming crisis well to reduce its effects on citizens.

Egypt prepared its first national strategy for climate change adaptation and disaster risk reduction in 2011, followed by issuing a low-emission development strategy in 2018, which was prepared to align with Egypt's vision 2030 sustainable development strategy. Nevertheless, there is still a need to consolidate all aspects of climate change into a single document that can serve as a key reference to

ensure that the climate change dimension is integrated into the overall planning of all sectors in the government.

The National Climate Change Strategy 2050 is a comprehensive long-term strategy that reflects Egypt's vision regarding the climate change file and its national goals in terms of supporting efforts that contribute to mitigating and adapting to climate change while supporting scientific research and innovative solutions in its regard, in addition to discuss the required funding for these actions, considering the social dimensions of climate change and the SDGs.

Egypt`s One Health Strategic Framework (2023 – 2027)

Vision

Towards a healthy society capable of facing the challenges and threats facing humans, animals, plants, and environment.

Mission

Promoting collaboration across all sectors through the One Health approach to achieve better health outcomes for humans, animals, plants, and the environment.

Objectives

Reducing health risks facing humans, animals, plants, and the environment by maximizing the capacities of the country's health systems by utilizing the One Health approach efficiently and effectively through:

- Inter-sectorial institutionalization to enable effective and sustainable coordination between the various sectors.
- Monitor common health threats and risks to humans, animals, plants, and the environment and identify the factors leading to their emergence and outbreaks.
- Enhancing health capacities in the relevant sectors for prevention, detection and effective response to health threats facing humans, animals, plants, and the environment.

Themes of the National One Health Strategic Framework

The National One Health Strategic Framework is guided by the global OHJPA 2022 - 2026 as well as One Health operational framework for action for the Eastern Mediterranean Region, focusing on zoonotic diseases.

The national framework includes five themes, each includes a set of medium- and long-term outcomes through which it can help achieve the expected results and contribute to achieving the desired impact.

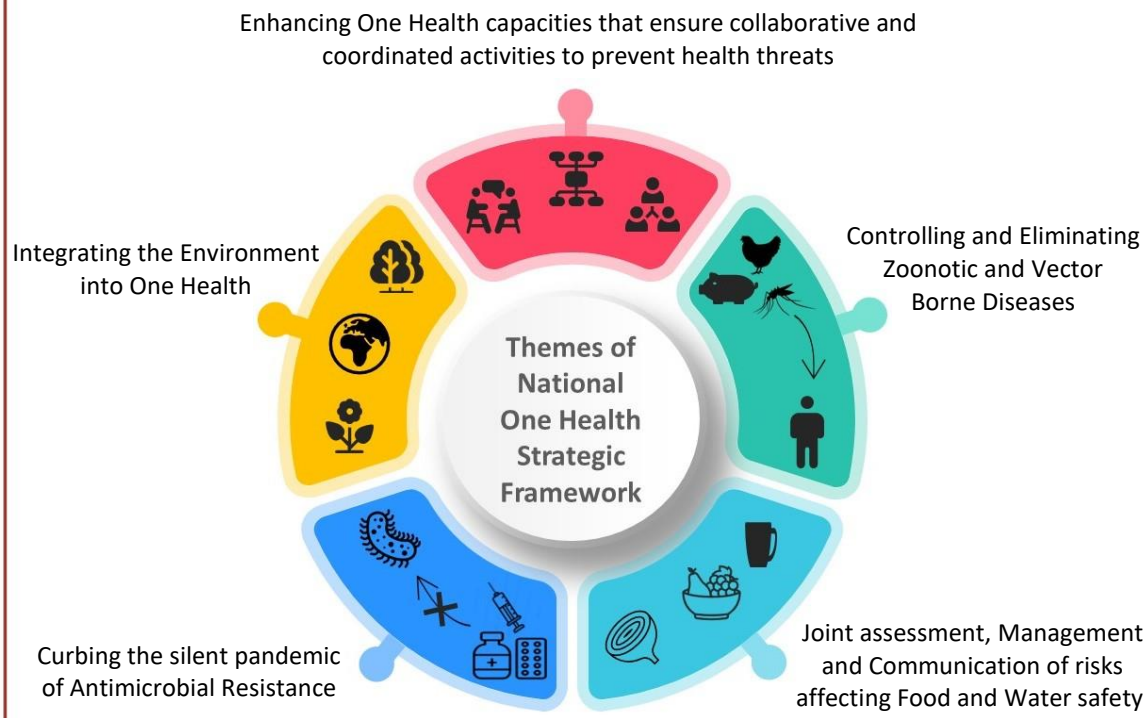

Figure 3: Themes of National One Health Strategic Framework

This strategic framework addresses the important health themes that need to be addressed to provide a systemic approach necessary to reduce common health risks between humans, animals, plants, and the environment, as well as obtaining sustainable food and health systems in addition to better management of the ecosystem, provided that all themes are processed in parallel.

I - Enhancing One Health capacities that ensure collaborative and coordinated activities to prevent health threats

This theme addresses building national capacities and providing adequate tools for the effective implementation of the multi-sectorial One Health approach. It also provides the necessary directions for optimal use of these resources and maximizing their utilization. This theme assesses the available capabilities, monitors the needs, and then develops operational, and activities plan to enhance and build the unavailable capabilities, whose presence is considered necessary for the successful implementation of One Health Strategy.

This theme's initial implementation will result in laying the foundations and core skills for strengthening the capabilities and establishment of mechanisms and tools that help build a workforce familiar with One Health and create an environment that allows the successful implementation of the "One Health" strategy.

It should be noted that it is necessary to prepare trained and qualified cadres to work in areas related to One Health and to form task forces from the relevant sectors for the early detection, reporting and rapid response to any of the health threats, in addition, working on the development of necessary guidelines related to governance structure and roles of various teams and a guide to implement One Health concept.

This theme is closely related to the rest of the other themes, as it supports the creation of an enabling environment that helps to implement the One Health approach successfully, through defining the concept, along with the engagement of civil society organizations, community leaders, private sector, and other relevant bodies to help unify efforts and maximize contributions in addressing issues under the One Health.

II - Controlling and eliminating zoonotic and vector borne diseases

This theme depends on reducing the possibility of emerging epidemics and pandemics of zoonotic origin and minimizing their effects locally through understanding the relationships and factors that cause their emergence and outbreaks, implementing prevention strategies in the initial stages, and strengthening unified national health systems in the field of surveillance, early warning, and rapid response. This comes through understanding the reasons for the emergence of such threats

and the factors helping their spread, along with identifying specialized and evidence-based measures that will help the country to prevent or control these threats.

Adopting risk-based solutions, along with strengthening legal and legislative frameworks at all levels and strengthening political support, helps reduce the burden of re-emerging endemic zoonoses and vector-borne diseases.

This theme's initial implementation requires updating the list of priority zoonotic diseases using scientific tools and methods, in addition to creating a unified electronic platform aimed at facilitating the exchange of information and data and raising the efficiency of joint epidemiological and laboratory surveillance between the relevant sectors. Exchange reporting should include passive and active surveillance data, event-based surveillance, and risk assessment. Preventive measures should also be enhanced at the animal level, including the provision of animal vaccines, which are considered one of the most important lines of defense and control of zoonotic diseases.

For each concerned sector, efforts must be coordinated with clearly defined roles being specific for each stage, either during preparedness, early warning, response, or recovery stage and based on international standard guidelines. In addition, there is a need to

review and update the governing laws and decrees that help in activating the role of the concerned authorities in the various stages referred to.

Establishing and implementing a community-based, risk-based approach by involving all necessary stakeholders and ensuring consistent application of the One Health principles at all levels through strengthening national policy frameworks as well as strengthening political support and financing, which help reduce the risk of zoonoses and vector-borne diseases.

Necessary steps to control or prevent vector-borne disease outbreaks include building capacity of technical teams to respond to vector-borne diseases, studying and amending the legislation related to vector-borne disease control, preparing educational and awareness programs that include bulletins and seminars, in addition to developing joint programs to monitor, control and prevent these diseases from outbreaks.

III - Joint assessment, management and communication of risks affecting food and water safety

This theme aims to mainstream the role of the One Health Strategy in coordinating efforts to ensure and monitor food and water safety. Food and water safety priorities focus on increasing health awareness and developing or amending relevant policies to ensure the health of

people, animals and environment and help preserve them during their interactions with the food supply chain and access to safe water.

In addition, promoting information related to food systems and encouraging scientific research aimed at identifying and monitoring diseases resulting from food and water contamination, assessing risks when setting policies and making decisions, as well as encouraging the implementation of the One Health Strategy in the field of reducing food and waterborne diseases.

IV - Curbing the silent pandemic of Antimicrobial Resistance (AMR)

This theme focuses on the importance of coordinating efforts to achieve the optimal use of antimicrobials to maintain their effectiveness and ensure fair and sustainable access to them, thus preserving human, animal, and plant health.

This is achievable through strengthening the government's ability to develop laws and policies based on scientific foundations that help reduce antimicrobial resistance, adopting national structures and defining rules of practice for managing AMR, as one of the priorities of collaborative action under the umbrella of One Health. As well as strengthening the national programs and initiatives necessary to support the achievement of the strategic goals of the One Health Strategy to reduce the risks of AMR.

Action plans need to review the time, list new stakeholders, link them with the One Health Strategic Plan, and pursue the implementation of a special communication strategy for antimicrobial resistance. The steps required to be implemented are setting up a system for sharing information and data between both veterinary and human inter-sectors; supporting the veterinary sector in the field of monitoring antimicrobial resistance, developing a monitoring and evaluation system to follow up on the implementation plan, in addition to encouraging joint research and studies between the relevant sectors while ensuring that manufacturing controls comply with environmental rules.

V - Integrating the environment into One Health

This theme aims to improve ecosystems that support the preservation of human, animal and plant health and help achieve the SDGs, in addition to protecting and restoring biodiversity and halting the degradation of ecosystems and the environment. It also supports the integration of environmental health, ecosystem preservation, and efforts to combat climate change in the One Health Strategy.

It is very important to issue a national action plan for One Health that takes into account the inclusion of data related to environmental

aspects in health decision-making, with a focus on raising the efficiency of workers in the environment, health and agriculture sectors about ecosystems and their basic relationship to One Health, with an emphasis on the need to search for ways of cooperation and coordination and effective communication between the concerned authorities and the establishment of a system for monitoring and evaluation.

Technical Pillars of the National One Health Strategic Framework

The technical pillars of the strategy are the operational directions that must be observed and adhered to under each of the five themes of the One Health strategic framework to ensure system integration and strengthen cooperation and coordination on an equal footing among all sectors working on One Health. It also helps to bridge gaps and enhance capabilities. Each pillar includes a set of procedures and roadmap activities that stakeholders will start implementing.

An operational plan should be issued later to guide the achievement of desired objectives.

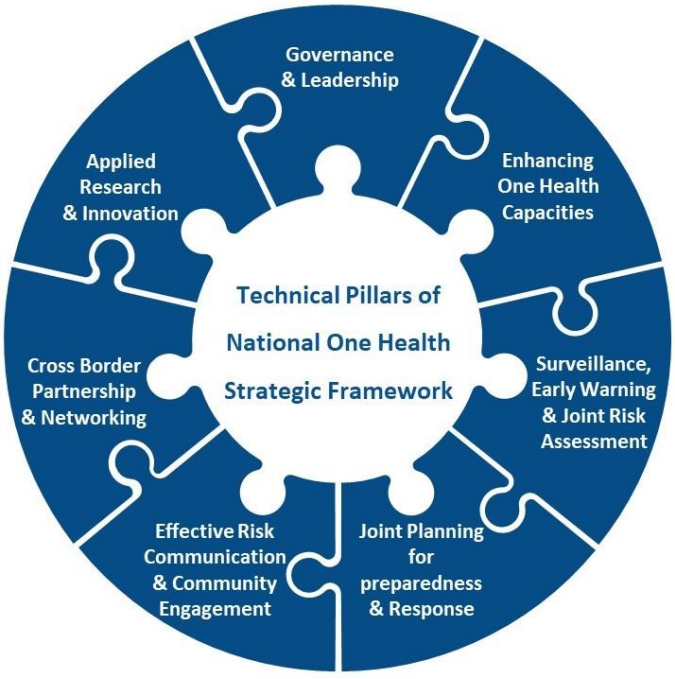

Figure 4: Technical pillars of National One Health Strategic Framework

Governance and Leadership

Governance has an active role in improving overall performance efficiency, and it has a significant impact on achieving goals. There is no doubt that the application of governance and the clarity of the roles and responsibilities of the concerned partners will produce the desired results from the application of the One Health concept. Governance principles include defining roles and responsibilities clearly and transparently, defining methods of communication and participation in decision-making, and comprehensive and accurate review of systems; Focusing on ensuring efficient spending and maximizing its impact to ensure resource sustainability and improving performance. Governance pillar includes the following:

- Formulate a national multi-sectoral committee for One Health with specific terms of reference and responsibilities.
- Develop strategies, policies and standard operating procedures required to implement One Health initiatives.
- Establish and maintain a coordination mechanism among stakeholders.

The first level: One Health Ministerial Committee

The Supreme National Committee for Combating Avian Influenza role was expanded to include various One Health themes, including

zoonotic diseases, food and water safety, AMR, and environmental health. Members of this committee include ministers, heads of agencies and other high-level decision makers representing all relevant ministries and government agencies.

This supreme committee is the highest multi-sectoral level of One Health. Its role will be linked to the adoption of policies, formulation of decisions and supervision of their implementation in coordination between all relevant ministries and governmental bodies. The functions of the work of this committee include

- Adopting policies and strategic oversight and facilitating cooperation between ministries and other agencies.
- Management and coordination of all comprehensive national efforts to implement the One Health approach in line with global and regional plans.
- Adopting the final version of the various national protocols and action plans, whether technical, administrative, or financial.
- Issuing decrees that will support implementing the roadmap activities included in the One Health action plan.
- Assessing financial needs and facilitating their continuous flow from the government and other various sources to implement what has been approved in the National One Health Plan.

- Following up on the operational plans and progress achieved periodically and proposing any other strategic interventions or activities that will overcome the challenges and improve the performance of the work teams to achieve the objectives approved in the national strategy.

The second level: Supreme coordination committee for One Health

The coordination committee plays an important role in ensuring that the collaboration is successful and generates effective joint actions. The main task of the supreme coordination committee is to provide strategic and technical advice on issues related to the themes of One Health, follow up on action plans, and coordinate between the various technical teams. It will also be responsible for linking the ministerial committee and different technical teams. This committee will hold executive leaders, senior technical experts and One Health focal points from the relevant ministries and agencies. The tasks of the Supreme coordination committee include the following:

- Advise on strategic directions to be prioritized and provide technical support.
- Provide the necessary guidance and support for the establishment of various technical teams.

- Follow-up and supervise the implementation of the various coordination plans and activities and ensure their consistency with the proposed goals and schedule.
- Establish cooperation and partnership with stakeholders to enhance the implementation of various activities and ensure long-term sustainability.
- Conducting periodic coordination meetings between different sectors to discuss health threats and common problems and proposing appropriate solutions.
- Assist technical teams to identify and describe current and future challenges in relation to the One Health strategy
- Coordinating and facilitating the work of technical teams in the preparation of joint reports related to the operational plan for One Health and informing the ministerial committee with an evaluation of implementation and proposed recommendations.

The third level: Technical teams

Subgroups of technical staff within the relevant ministries and bodies will be formed from different disciplines according to the themes of One Health strategy; governance and One Health, zoonotic diseases, food and water safety, AMR and environmental health under the umbrella of the Supreme Coordination Committee, and each team member will be selected from the sectors and bodies assigned to

each, according to their field of specialization. The work functions of these teams include:

- Providing technical feedback to assist decision makers in developing One Health policies and protocols
- Formulating the national operational plan and coordinating and directing implementation in accordance with the strategic plan
- Planning, coordinating and directly supervising the implementation of the One Health action plan and activities related to each theme.
- Identifying the resources required from the various ministries and agencies that are necessary to ensure the implementation of the activities of the One Health operational plan
- Identifying different stakeholders and promote collaborative activities
- Establishing a system for exchanging information and sharing reports between the various technical teams through effective communication and coordination with relevant partners.
- Conducting periodic coordination meetings that include various partners to discuss health threats and common problems and propose appropriate solutions.
- Identifying and describing current and future challenges in relation to the One Health Strategic Plan.

- Preparing and submitting various reports to the Coordinating Committee regarding the themes of the One Health Strategic Plan.
- Follow-up and evaluation of the implementation of the One Health activities.

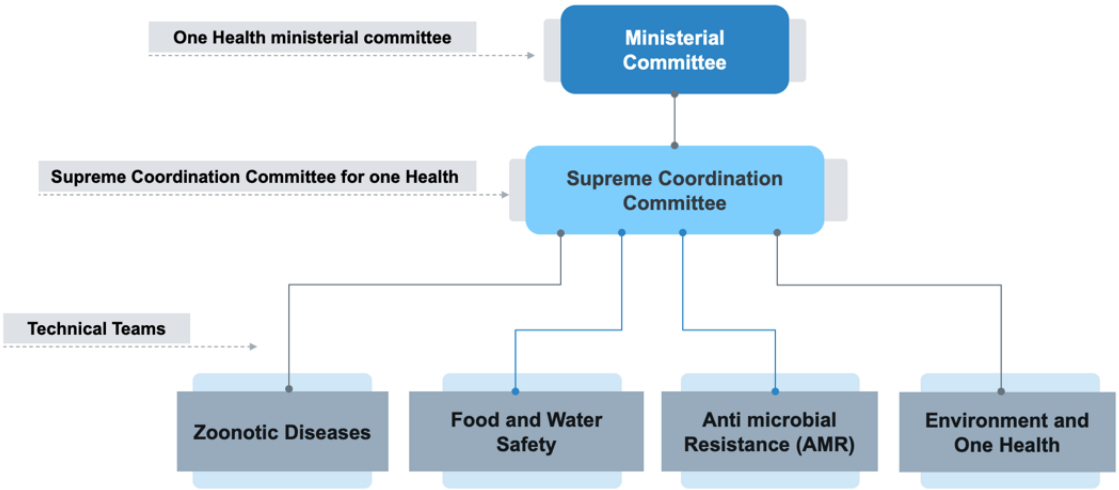

Figure 5: The proposed governance structure

Enhancing One Health Capacities

Coordination mechanisms and collaborative capacities are needed to strengthen health systems and to promote the concept of One Health. Functioning and effective health systems also play a crucial role in the prevention of zoonotic diseases, maternal mortality rates, food safety, and other risks. Human resources are one of the most important

elements that underpin the concept of One Health. The necessary steps for capacity development are:

- Conduct a situation analysis to determine the degree of experience, skill, training and responsibilities of the employees in all relevant sectors.
- Draft a national workforce development strategy to enhance the capacity of employees in all concerned entities.
- Supporting relevant training programs such as: field epidemiology, rapid response, laboratory surveillance, infection control, biosafety procedures, and others.
- Assessment of current resources, the most important of which is the capabilities of laboratories at the human or animal level, in both governmental and non-governmental laboratories.
- Establish postgraduate diploma or masters / educational or vocational, in the faculties of veterinary medicine and human medicine or in cooperation with them to prepare trained cadres taught by professors and experts in One Health specialization.

Surveillance, Early warning and Joint Risk Assessment

Early warning systems in general depend on surveillance systems with the main objectives of collecting information about diseases and their causes and predict the possibility of their development to an epidemic

situation and present them at the appropriate time to stimulate urgent health interventions by public health authorities. The One Health strategy ensures strengthening coordinated surveillance, early warning, and joint risk assessment at the national level to optimally deal with various health events. The steps are as follows:

- Strengthening the joint integrated surveillance systems for diseases and health related events with the provision of the necessary infrastructure, logistics, plans and standard operating procedures.
- Reviewing and evaluating existing data collection forms and available databases, while striving to establish a system for exchanging information and sharing reports between the various technical teams through effective communication and coordination with relevant partners.
- Updating the list of priority zoonotic diseases and reviewing the reporting mechanisms for these diseases.
- Create a joint risk assessment group and define the different roles of the sectors to carry out the joint risk assessment.
- Providing workforce and stakeholders with integrated training on epidemiological and laboratory surveillance systems under the umbrella of One Health.

Joint Planning for Preparedness and Response

The One Health Strategy highlights the importance of strengthening coordinated preparedness and response mechanisms at the national level to optimally deal with various health events. The steps are as follows:

- Review existing plans and develop an integrated, multi-sectoral national plan for emergency preparedness and response with drafting of standard operating procedures.
- Establish rapid response teams that are multi-disciplinary and multi-sectoral at various administrative levels.
- Training response teams theoretically and practically through workshops, simulation exercises and on-job training.
- Periodic and continuous evaluation of the readiness of preparedness and response plans, and to ensure their effectiveness, with a review of joint coordination mechanisms.

Effective Risk Communication and Community Engagement

Developing the capacity of different sectors to communicate effectively with local communities, local partners and other stakeholders and gaining commitment and support from all sectors is one of the main tasks to promote the One Health approach and raise

community awareness and engagement around the concepts of One Health. The steps are as follows:

- Define the target audience and the different communication channels to be used.
- Establish effective means of coordination and communication to enhance the advocacy activities regarding One Health.
- Raise public awareness to encourage disease notification, prevention, and containment.
- Arranging meetings with prominent key actors to gain support and ensure effective participation.

Cross Border Partnership and Networking

Establishing partnerships with national stakeholders or outside the country with other countries or international organizations as part of the strategy to promote the concept of One Health, through the following:

- List relevant stakeholders and explain how they can help to implement the One Health Plan.
- Create or modify existing procedures to follow up and facilitate coordination and cooperation between relevant sectors.
- Establishing a unified electronic system to encourage cooperation and communication across different platforms.

- Hold frequent meetings to review the activities that have been accomplished and share success stories and lessons learned.
- Establishing partnerships with international organizations that are working on different One Health themes.
- Cooperation with neighboring countries in strengthening and enhancing the concept of One Health at the local and international levels.

Applied Research and Innovation

Interest in applied research and innovation is essential for building knowledge and developing solutions to deal with various challenges that are geared to cover key research gaps. It can focus on priority diseases and risks such as enhancing knowledge about zoonotic pathogens and their transmission mechanism, and can be done by:

- Assessing Egypt's capability to conduct the required research, strengthening these capabilities, and activating cooperation in the field of scientific research.
- Identifying priority research areas and preparing collaborative research proposals in various common fields, including zoonotic pathogens.

- Encouraging and providing all that is needed for applied research that serves the manufacture and development of locally produced animal vaccines.
- Publish or communicate the results of joint research activities under the umbrella of One Health.
- Resorting to research laboratories and universities' expertise to implement applied research projects.
- Preparing agreements with national and international partners for cooperation to overcome the problems facing the main research topics, including providing the necessary funding.

Looking Forward towards Effective Implementation

One Health is the key approach in addressing the complex health challenges facing our society, such as ecosystem degradation, unbalanced food system, infectious diseases, and AMR.

The national strategic framework is based on five themes, guided by the global Joint plan of Action and the regional One Health operational framework, and establishes a framework that integrates systems and capabilities to work better and advance the One Health approach, improve human, animal, plant, and environmental health, while contributing to sustainable development goals.

Accordingly, the strategic framework will be supported by an operational plan that includes the preparation and implementation guidance for the concerned partners/stakeholders to mainstream the One Health approach at different levels. This comes in addition to setting up a framework for monitoring and evaluation that includes target results and indicators linked to selected outputs for each component to measure and facilitate reporting on the progress of the strategy throughout its initial five-year period. The strategy goals will be linked to reflect achievements relevant to SDGs.

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Annex

Definitions

One Health

It is an integrated, unifying approach to balance and optimize the health of people, animals, and the environment. It is particularly important to prevent, predict, detect, and respond to global health threats such as the COVID-19 pandemic.

This approach mobilizes multiple sectors, disciplines, and communities at varying levels of society to work together. This way, new and better ideas are developed that address root causes and create long-term, sustainable solutions.

One Health involves the public health, veterinary health, and environmental sectors. The One Health approach is particularly relevant for the control of zoonotic diseases, food and water safety, nutrition, combatting antimicrobial resistance and pollution management.

Quadripartite Partnership

The Tripartite organizations including the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO) and World Organization for Animal Health (WOAH, formerly OIE) have been working together for decades to address risks present at the human–animal–environment interface.

In February 2021, the three organizations called on the United Nations Environment Program (UNEP) to join the Tripartite, reaffirming the importance of the environmental dimension of the One Health collaboration.

Following the Twenty-seventh Tripartite Annual Executive Meeting (in March 2021), the Tripartite and UNEP agreed to jointly develop a strategy and an action plan to prevent future pandemics applying the One Health approach. In March 2022, at the Twenty-eighth Tripartite Annual Executive Meeting, the four organizations signed a memorandum of understanding (MoU) to declare the change from the Tripartite to a new Quadripartite partnership, with UNEP as an equal partner.

Zoonotic Diseases

A zoonosis is an infectious disease that has crossed from animals to humans. Zoonotic pathogens may be bacterial, viral, or parasitic, or they may also involve unconventional agents that can spread to humans through direct contact or through vehicles such as food, water, or the environment.

They represent a major public health problem around the world due to our close relationship with animals in agriculture, as companions and in the natural environment. Zoonoses can also cause disruptions in the production and trade of animal derived food products and animal products for other uses.

Vector-borne diseases

Vector-borne diseases are human illnesses caused by parasites, viruses and bacteria that are transmitted by vectors. It includes diseases such as malaria, dengue, yellow fever, leishmaniasis, Chagas disease, and others.

The burden of these diseases is highest in tropical and subtropical areas, and they disproportionately affect the poorest populations.

Distribution of vector-borne diseases is determined by a complex set of demographics, environmental and social factors.

Antimicrobials Resistance

Antimicrobials - including antibiotics, antivirals, antifungals and antiparasitic - are medicines used to prevent and treat infections in humans, animals, and plants.

Antimicrobial resistance (AMR) occurs when bacteria, viruses, fungi, and parasites evolve over time and no longer respond to medicines. The emergence and spread of drug-resistant pathogens that have acquired new resistance mechanisms, leading to antimicrobial resistance, continues to threaten our ability to treat common infections, making infections harder to treat and increasing risk of disease spread, severe illness and death.

Those microorganisms that develop multi- or pan- antimicrobial resistance are sometimes referred to as “superbugs”.

Environmental Health

The health of the environment is an essential cornerstone for the health and well-being of humans, animals, and plants. Maintaining health of the environment can be done through the conservation of the natural environment, which in turn helps preserve biodiversity, limits the emergence and transmission of diseases across the animal–human–plant interface, increases well-being and promotes health.

Clean air, stable climate, adequate water, sanitation and hygiene, safe use of chemicals, protection from radiation, healthy and safe workplaces, sound agricultural practices, health-supportive cities and built environments, and a preserved nature are all prerequisites for good health.

Environmental degradation caused by human activities poses several health threats that are invariably complex and rooted in how humans interact with and use the environment.