FEDERAL REPUBLIC OF NIGERIA

ONE HEALTH STRATEGIC PLAN
2019–2023

Federal Ministry of Health
Federal Ministry of Agriculture and Rural Development
Federal Ministry of Environment

One Health Strategic Plan 2019–2023

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LIST OF ABBREVIATIONS

AEFI	Adverse Events Following Immunization
AFENET	African Field Epidemiology Network
ARIS	Animal Resource Information System
AU-IBAR	African Union Inter-African Bureau for Animal Resources
BEP	Bio-security Engagement Program
BLIS	Basic Laboratory Information System
DVPCS	Department of Veterinary and Pest Control Services
ECOWAS	Economic Community of West African States
EID	Emerging Infectious Disease
EPR	Epidemic Preparedness and Response
FAO	Food and Agriculture Organization
FCT	Federal Capital Territory
FEC	Federal Executive Council
FMARD	Federal Ministry of Agriculture and Rural Development
FMoH	Federal Ministry of Health
GDP	Gross Domestic Product
GHSA	Global Health Security Agenda
GIS	Global Implementation Solutions
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations
IUCN	International Union for the Conservation of Nature
JEE	Joint External Evaluation
NADIS	National Animal Disease Information and Surveillance
NCDC	Nigeria Centre for Disease Control
NCH	National Council on Health
NFELTP	Nigeria Field Epidemiology and Laboratory Training Program
NUC	National University Commission

OIE	Office Internationale des Epizooties / World Organization for Animal Health
PHEIC	Public Health Emergency of International Concern
POE	Points of Entry
PPP	Purchasing Power Parity
REDISSE	Regional Disease Surveillance System Enhancement
RRT	Rapid Response Team
SARS	Severe Acute Respiratory Syndrome
SMS	Short Message Service
SORMAS	Surveillance Outbreak Response Management and Analysis System
STI	Sexually Transmitted Infection
SWOT	Strength Weakness Opportunities and Threats
TADs	Transboundary Animal Diseases
UMB	University of Maryland Baltimore
WAHIS	World Animal Health Information System
WHO	World Health Organization

FOREWORD

One Health is an approach to designing and implementing programs, policies, legislations and research in which multiple sectors plan, communicate and work together to achieve better public health outcomes for the human, animal, and environment sectors. The world is confronted with a recurrent epidemics and other public health events that impact negatively on human health but whose origin may be traced to non-human sources. Disease occurrence and spread is related to environmental factors, animal health, climate change and other human activities such as travel, urbanisation and globalisation. Diseases at the human-animal ecosystem interface (e.g. zoonotic diseases, water/food borne diseases, vector borne diseases) continue to pose threats to humans and animals with increasingly significant morbidity and mortality. Worse still, of the estimated 1400 diseases known to affect man, 60% are of animal (zoonotic) origin. Similarly, of the emerging infectious diseases reported globally, 75% are of zoonotic nature. In Nigeria, catastrophic effects of zoonotic diseases such as Ebola, Lassa fever, Dengue, rabies and yellow fever have been reported in the last 5 years. The increased burden of zoonotic diseases is a result of increasing human population growth and therefore increased need for food (need for farming and animal as sources of food), human encroachment on ecosystems that are high risk for diseases transmission, closer integration with animals /wildlife and rapid urbanisation. It is therefore imperative that we embrace the One Health approach to confront the ever-increasing disease burden affecting Africa in general and Nigeria in particular.

Many microbes co-exist with animals and humans. Considering the impact of the human-animal-ecosystem interface on health, the need for a coordinated multi-sectoral approach to address the attendant health risks associated with such interface has been emphasized. A One Health approach is known to be important in most spheres of public health such as food safety, control of zoonoses, antimicrobial resistance, surveillance, outbreak response and human resource strengthening. In Nigeria, some strides have been made in implementing a One Health approach and these include the successful control of epidemic-prone diseases like H5N1 avian influenza, Ebola virus diseases, Monkey pox, Lassa fever and yellow fever. The Nigeria Field Epidemiology and Laboratory Training Program, a public health workforce development strategy, is also an important intervention aimed at promoting the One Health approach which continuously builds the capacity of medical doctors, veterinarians, laboratory scientists and environmental scientists especially in outbreak control and research.

In line with the Global Health Security Agenda (GHSA), the Federal Government has

taken the initiative leveraging on the gains already made, by institutionalising One Health within the structures of relevant MDAs. It is envisioned that One Health-focused projects like the Regional Disease Surveillance System Enhancement (REDISSE) will make invaluable contribution to this process. For the timely prevention and control of zoonoses and other emergencies, the Federal Government recognises the need to join forces across sectors vis a vis sharing of epidemiological data including laboratory information or public health events. It is against this backdrop that that the NCDC, in collaboration with other Ministries, Departments and Agencies, has developed a 5-year strategic plan and a 1-year implementation plan for One Health in Nigeria (2019-2023). This plan was jointly developed with Department of Veterinary and Pest Control Services in the Federal Ministry of Agriculture and Rural Development, Federal Ministry of Health, Federal Ministry of Environment, Academia, development partners, the private sector as well as non-governmental organisations. The plan addresses some of the gaps identified in the Joint External Evaluation of the IHR core capacities. The plan reflects the shared commitment to enhance multi-sectoral collaborations in addressing human-animal ecosystem public health challenges. If successfully implemented, the plan will institutionalise One Health, address zoonotic diseases, enhance food safety and security, improve livelihoods of many Nigerians and keep Nigeria heathier and safer. We call upon you all to support the implementation of the One Health strategy.

HONOURABLE MINISTER OF HEALTH

HONOURABLE MINISTER OF AGRICULTURE AND RURAL DEVELOPMENT

HONOURABLE MINISTER OF ENVIRONMENT

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A full list of contributors to this plan is provided after the references.

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EXECUTIVE SUMMARY

Nigeria, with a population of nearly 200 million and an annual estimated growth rate of 2.6% is faced with an increasing infectious and non-communicable disease burden. Among the infectious diseases are zoonotic diseases. Successful control of zoonotic diseases calls for a multi-sectoral approach to prevention and control. Multisectoral "One Health" approach is also required for other public health threats at the human-animal- ecosystem interface. These include food safety and security, antimicrobial resistance and emerging and re-emerging infectious diseases with consequent spill over from animals to humans and vice versa. Therefore, a robust One Health approach is required in tackling these health issues. One Health is an approach to designing and implementing programs, policies, legislations and research in which multiple sectors plan, communicate and work together to achieve better public health outcomes for all the sectors.

A jointly developed One Health strategic plan will allow human, animal (including wildlife), environment and other expertise to work collaboratively to prevent, detect and respond to emerging and re-emerging diseases from this interface. Nigeria conducted its Joint External Evaluation for International Health Regulations core capacities in June 2017 with strengths identified in the One Health space.

These included successful control of zoonotic diseases such as H5N1 Avian influenza, Ebola, Yellow fever, Monkey pox and Lassa fever. A multidisciplinary surveillance and outbreak response capacity building program in the field epidemiology and laboratory training program has been implemented since 2008 and has trained close to 400 field epidemiologists in the human, animal and laboratory health sectors. Over 1000 public health officers have completed the 'frontline' FETP. In July2017, NCDC convened a multi-sectoral group of experts that prioritised zoonotic diseases in Nigeria using a pre-defined international criterion for zoonosis prioritization.

The prioritisation helps focus the limited resources on "the highest burden conditions". The implementation of Regional Disease Surveillance System Enhancement (REDISSE) project being financed by the government through a credit facility from the World Bank and domiciled in NCDC is also being implemented through a One Health approach. A One Health approach was also used for an antimicrobial resistance (AMR) situational analysis and development of an AMR National Action Plan. Despite these progress in the One Health space, there still exists gaps in zoonotic disease surveillance and outbreak response. Additionally, a coordinated institutionalised long-term plan for One Health was identified as a gap that needed to be addressed in the JEE. NCDC therefore

convened its One Health stakeholders from MDAs in health, agriculture, environment, academia, development partners, private sector and non-governmental organisations to undertake a situation analysis and develop an implementation plan for One Health in Nigeria.

The Nigeria One Health initiative with the coordination of NCDC has the vision of creating a nation of healthy people and animals living in a balanced ecosystem. The mission is to build a strategic, dynamic and functional platform that advances human, animal and environmental health through multidisciplinary and inter-sectoral collaboration. This would be achieved through creating partnerships, leadership and coordination, using a skilled workforce with an emphasis on research, innovation and development. The plan will be implemented through five thematic areas, namely - surveillance and response, training and research, governance and leadership, communication and resource mobilization.

If successfully implemented the plans will lead to:

- A sustainable and institutionalised One Health platform at all government levels
- A strategic, integrated, safe and secure research agenda and sustained capacity for implementation of OH initiative in Nigeria
- Increased awareness of OH for all stakeholders
- Enhanced Government and other stakeholders' commitment and support for the OH platform
- Effective prevention, detection and response to public health threats through the OH approach

Additionally, implementation of the One Health strategy will lead to strengthening the IHR core-capacities, Office Internationale des Epizooties' guidelines on PHEICs, and eventually lead to a safer, healthier Nigeria. The plan will also realise the goals of the National Action Plan for Health Security (NAPHS) which include National Action Plan on Antimicrobial Resistance amongst others in alignment with the NCDC Strategy and Implementation Plan: Idea to Reality, 2017-2021and existing plans for the Department of Veterinary and Pest Control, FMARD and Federal Ministry of Environment.

1.0 Introduction

1.1 Country Profile: Nigeria

1.1.1 Geography and Population

Nigeria is located in West Africa along the Atlantic Ocean's Gulf of Guinea. The country's land borders are with Republics of Benin to the west, Cameroon to the east, Chad to the northeast, and Niger to the north. It has a land area of 356,667 square miles (923,768km^2) and a coastline area of 530miles. It is the most populous country in Africa with a population of about 196 million (2018) and a projected annual population growth rate of 2.6%.

The country has two major seasons each year: dry season from October to March and the rainy season from April to September. Natural disasters with outstanding health emergencies are not frequent in Nigeria except for seasonal flooding and consequently, internally displacement of persons. Adverse effects of diseases are often exaggerated by low socioeconomic status, low level of education, less than optimal health care services, poor transportation and communication.

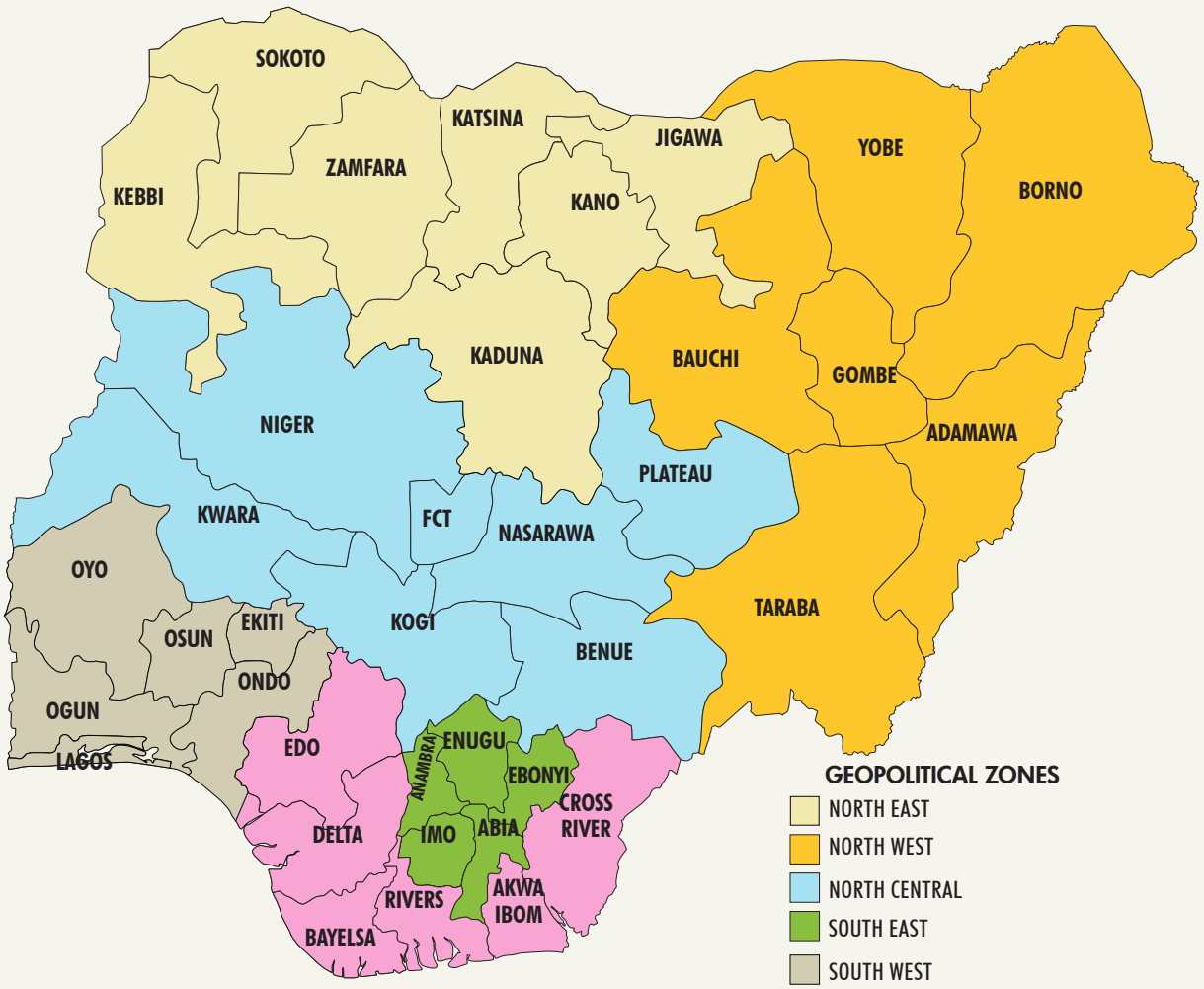
1.1.2 Economic Activities

Nigeria is a culturally diverse middle-income, mixed economy and an emerging market, with expanding manufacturing, financial, service, communications, technology, and entertainment sectors. It is ranked as the 21st largest economy in the world in terms of nominal GDP, and the 20th largest in terms of purchasing power parity. It is the largest economy in Africa; its re-emergent manufacturing sector became the largest on the continent in 2013. As a regional power, the Nigerian economy represents about 55% of West Africa's GDP (African Development Bank, 2013), and accounts for 64 percent of GDP based on purchasing power parity (PPP) valuation of the fifteen- member countries in the ECOWAS sub-region. It produces a large proportion of goods and services for the West African sub-region.

1.1.3 Administrative Structure

Nigeria is a federal republic with three tiers of government: Federal (central), State and Local levels. It is divided into 6 geopolitical zones – North West, North East, North Central, South West, South East and South South – composed of 36 states and a federal capital territory. At the state level, the relevant Ministry of Local Government and Chieftaincy Affairs, or Bureau of Local Government Affairs, is responsible for the administration of state- level Acts governing local authorities. Local government

exists in a single tier across all states. There are 768 local government authorities (LGAs) and six FCT area councils ToTaling 774 authorities. The Head of State and Head of Government is the President, who is democratically elected by the people of Nigeria. The national assembly comprises an elected House of Representatives and an elected Senate. The Senate and House of Representatives have 109 and 360 members respectively providing legislative functions of the government.



Map of Nigeria showing the 36 states and the Federal Capital Territory (FCT) Abuja and the six geopolitical zones

1.1.4 Human and Animal Health Systems in Nigeria

The Nigeria's National Health Act (2014) and Animal Disease Control Act provides the legal framework for regulation, development and management of both National Health System and Animal Health sub-sectors setting standards in rendering the health services in the Nigerian federation. The acts are an embodiment of human and animal health emergency laws and provide rights and access to any public health emergency at the three tiers of the government.

1.1.4.1 Human Health Structure

In 2015, FMoH estimated a ToTal of 34,176 health facilities in Nigeria of which 88.1% are primary health care facilities, 11.7% secondary and 0.2% tertiary. Of these, 33% are owned by the private sector, which provides 60% of health care in the country. While 60% of the public primary health care facilities are located in the northern zones of the country, they are mainly health posts and dispensaries that provide only basic curative services (NSDPH, 2018). Nigeria has started moving from the first to the second stage of epidemiological transition since some non-communicable diseases like cancers and hypertension have started appearing among the list of major causes of morbidity and mortality in the country. Since health is on the concurrent list, each of the three tiers of government has its roles and responsibilities regarding health issues.

Integrated Disease Surveillance and Response (IDSR) is a strategy within the WHO-AFRO region which promotes rational use of resources by integrating and streamlining common surveillance activities. The core functions of surveillance and response in the IDSR are to detect (identify cases and events), notify (report cases/events/conditions to next level), process (analyse and interpret findings), establish (investigate and confirm cases/events/conditions) prepare for response, respond (institute control measures), inform (communicate and provide feedback), and finally assess (evaluate and improve the surveillance and response system).

Health facilities e.g. dispensaries, health centres, clinics hospitals (both private and public) constitute the first level of surveillance reporting. However, the front-line health facility staff report to Disease Surveillance and Notification Officers (DSNOs) at the LGA level. The DSNOs in turn submit data to the state level, (the state epidemiologists and state DSNOs) who

collate the aggregate data for the state and send data to the Surveillance Department of Nigeria Centre for Disease control (NCDC). The IDSR is therefore implemented at these levels: health facilities, LGA, State, and National.

The laboratory is an integral component of surveillance, especially for the purpose of case confirmation through identification of causative organisms or pathogens, management and public response/interventions.

The Nigeria Centre for Disease Control (NCDC) manages the National Reference Laboratory in Gaduwa, Abuja, and supports a network of public health laboratories across the country.

1.1.4.2 Animal Health Structure

The organization of the veterinary services in Nigeria mirrors the administrative and political organization of the national (federalised) territory : (a) the federal level is in charge of the development of policies and implementation of protocols, monitoring and coordination of development programmes, national disease control, and development of relevant legislation, (b) the state veterinary services are in charge of disease control, provision of clinical services, livestock product quality control, meat inspection, agricultural extension services and development of regulations, and (c) local government veterinary services mainly participate as mobilization and extension agents in operational actions in close coordination with the State Area Veterinary Officers, livestock farmers, traditional institutions, law enforcement agents and other stakeholders to facilitate delivery of services, disease reporting, control of livestock diseases and pests.

The Federal Department of Veterinary and Pest Control Services (FDVPCS) of the Federal Ministry of Agriculture and Rural Development (FMARD) is composed of five divisions and has field offices at state capitals for ease of collaboration with the state Director of Veterinary Service (DVS).

At the federal level, the National Veterinary Research Institute (NVRI) is the reference laboratory for the diagnosis and investigation of livestock diseases that collaborates with international reference laboratories. NVRI is recognised as a Regional laboratory for West and Central African countries for avian influenza and trans-boundary animal diseases (TADs).

It is also involved in the production and testing of vaccines for the control of animal diseases in the country and conducts research and training in relevant veterinary fields. Two other federal institutions are involved in veterinary services missions: (a) NAFDAC: National Agency for Food Drug Administration and Control and is in charge of registration and control of veterinary medicines and biological products and (b) NAQS: Nigeria Agricultural Quarantine Services in charge of the border control and quarantine service.

Nigeria has nine accredited faculties of veterinary medicine (Abeokuta, Abuja, Ibadan, Maiduguri, Makurdi, Nsukka, Sokoto, Umudike and Zaria). Three colleges of animal health and production located in Ibadan, Kaduna, and Vom also provide training for the veterinary paraprofessionals.

A private veterinary sector is in place, but there is currently no provision for the delegation or regulation, nor is there appropriate clarity about government responsibilities towards this private sector (animal health accreditation or sanitary mandate). Private veterinarians are mainly involved in the supply and distribution of veterinary drugs, vaccines, equipment and livestock feeds, and in the provision of routine clinical services, preventive care for livestock, and consultancy services.

1.1.5 Biodiversity and Wildlife Resources

Nigeria occupies a unique geographic position in Africa and its highly varied climate and other geographic features endow the country with one of the richest in biodiversity on the continent.

According to the 2006 National Biodiversity Strategy and Action Plan Nigeria possesses more than 5,000 recorded species of plants, 22,090 species of animals, including insects and 889 species of birds, and 1,489 species of microorganisms. Nigeria is known as a global hotspot for primate species, with a great diversity found especially in the Gulf of Guinea forests of Cross-River State and adjacent parts of Cameroon. Some important endemic birds and mammals include three monkey species, the white-throated monkey (*Cercopithecus erythrogaster*), Sclater's guenon (*Cercopithecus sclateri*) and the Niger Delta red colobus (*Procolobus pennantii epieni*) and three birds, the Anambra waxbill (*Estrilda poplipaia*), the Ibadan malimbe, (*Malimbus ibadanensis*) and the Jos indigo-bird (*Vidua maryae*).

The most endangered gorilla subspecies on earth, the Cross-River gorilla (*Gorilla gorilla diehli*) with an estimated population of less than 250 individuals is found only in a couple of protected areas of the Nigeria/ Cameroon border.

The International Union for the Conservation of Nature (IUCN) Red List of Threatened Species (i.e. of globally threatened species) includes 148 animals and 146 plants that are found in Nigeria. Of these, 26 animals and 18 plants are classified as endangered and another three animals and 15 plants are critically endangered worldwide.

In general, since the beginning of the last century, biological resources in Nigeria have been subjected to increasing pressures of habitat loss, over harvesting, pollution and the introduction and invasion by alien species. Consequently, their productive potential for present and future generations is threatened. Improvement in the quality of life for the people will require long-term economic growth which is itself dependent upon improved management and conservation of the natural resource base. Several obstacles to sustainable management of biodiversity include financial and human resource constraints, lack of awareness among the general public and decision makers, inadequate legal structures at the national level, and ineffective cooperation between countries in the sub-region.

Sustainable management of biodiversity and wildlife in Nigeria requires a careful juxtaposition between the needs of a large and growing human population today and the long-term sustainability of the natural resources that people ultimately depend upon for the future.

2.0 One Health Situation Analysis

2.1 Zoonoses

2.1.1 Burden of zoonoses in Africa

Weak surveillance and paucity of scientific data makes it difficult to quantify the true burden of zoonotic diseases in most African countries. Research however identifies some countries in East and West Africa: Ethiopia, Tanzania, Nigeria, Togo and Mali as the nations that bear the greatest burden of neglected zoonoses not only in Africa but globally.Parts of Africa are also considered potential hotspots for zoonotic emergence because of high wildlife biodiversity, rapid human population growth, change in land use and recurrent outbreaks of emerging infectious diseases of zoonotic origin. Besides the public health burden, zoonotic outbreaks in Africa have serious impact on economies of affected countries due to production losses, implications on livestock trade and international travel. Outbreaks of Rift Valley fever in the horn of Africa, viral haemorrhagic fevers in West and East Africa and anthrax in Southern Africa are classic examples.

2.1.2 Burden of Zoonoses in Nigeria

Nigeria is considered to have one of the highest burdens of endemic diseases globally and one of the four countries that contributes 44% of the world's poorest livestock keepers. Diseases like anthrax, zoonotic tuberculosis and rabies are widespread among livestock keepers, but their neglected nature provides a false perception of low public health importance. Besides the burden of endemic diseases, the country has also experienced epidemics of zoonotic origin like Ebola Virus Disease, avian influenza and Lassa fever and is considered to have one of the highest risks of emerging infectious diseases of zoonotic origin based on a spatial model to describe the global spatial patterns of zoonotic emerging infectious disease.

Despite the huge burden of endemic zoonosis and increased risks of emergence of novel zoonotic diseases, there is little awareness about zoonosis, even among health professionals in Nigeria. While there is no single intervention that can address all zoonoses, it is now increasingly recognized that the establishment of inter-sectoral collaborative mechanisms is the most efficient strategy to address existing and emerging zoonoses. However, the coordination mechanisms in place are more administrative in nature and not always effective in promoting diffusion of knowledge across sectors. In the aftermath of H5N1 outbreak of 2008, there has

been a felt need for a flexible space outside formal structures that promote technical dialogue between human, veterinary, and wild life health sectors and inform policy discussions in the formal sector.

2.1.3 Prioritisation of zoonotic diseases in Nigeria

Zoonotic diseases represent critical threats not only to global health security but also to economies of developing countries. However, in the resource-poor settings of most developing countries like Nigeria, where HIV, malaria and respiratory illnesses are the main cause of mortality, inadequate resources are dedicated to the control of zoonotic diseases. There is therefore a need to ensure that the limited resources are channeled to address the most important problems to achieve the greatest outcomes in improving human and animal health. Effective mitigation of the impact of endemic and emerging zoonotic diseases of public health importance requires multi-sectoral collaboration and interdisciplinary partnerships. A multi-sectorial zoonotic disease prioritisation workshop was therefore conducted to develop a priority zoonotic disease list through collaborative decision-making process in July 2017. From this process, the top 10 priority zoonotic diseases in Nigeria agreed are:

Table 1: Agreed list of priority zoonotic diseases in Nigeria (July 2017)

1.	Rabies
2.	Avian influenza
3.	Ebola
4.	Swine influenza
5.	Anthrax
6.	Tuberculosis
7.	African Trypanosomiasis
8.	Lassa fever
9.	Escherichia coli O157
10.	Brucellosis

"Yellow fever, Monkey pox"
After prioritisation of zoonotic disease in July 2017, Nigeria started recording cases of Monkey pox which became an emerging zoonotic public health events in the country and re-emergence of Yellow fever.

2.2 Antimicrobial Resistance

Globally, the threat from antimicrobial resistance (AMR) has continued to grow and compromises effective treatment. The impact is particularly felt by vulnerable patients, who

bear the consequences of associated higher costs, worsened illness, greater disability and increased mortality. Though estimates show that the burden is largely borne by low-income countries like Nigeria, the magnitude of its impact on human health, food safety and international trade of food animal products remains unknown.

The 68th World Health Assembly (WHA) in May 2015 adopted the Global Action Plan, in collaboration with the Food and Agricultural Organization (FAO) and the World Organisation for Animal Health (OIE) to control AMR. It also requested Member States through WHA Resolution 68.7, to participate in an integrated global programme for the control of antimicrobial resistance. The goal of the Global Action Plan is to, "ensure continuity of successful treatment and prevention of infectious diseases with effective and safe medicines that are quality-assured, used in a responsible way and accessible to all who need them". Using several criteria including all-cause mortality, healthcare and community burden, prevalence of resistance, 10-year trend of resistance, transmissibility, the WHO prioritised 10 pathogens for global surveillance.

These pathogens are in three categories: critical, high and medium priority. The most critical group includes multidrug resistant bacteria that pose a particular threat in hospitals, nursing homes, and among patients using medical devices such as catheter. The high and medium bacteria such as Neisseria gonorrhoea and Salmonella are those that cause more common diseases and are becoming increasingly resistant to last-line antibiotics.

The report of the Nigerian AMR situation analysis conducted in 2017 showed that, communicable diseases requiring antimicrobial therapy, accounted for 66% of ToTal morbidity in 2015. Several of the "priority bacteria" listed by WHO as posing the greatest threat to human health, are prevalent in healthcare settings in Nigeria. This is of grave concern as these bacteria which are resistant to multiple antibiotics, can spread resistance genes to other bacteria. In addition, susceptibility testing is rarely performed due to limited laboratory capacity.

Nigeria constitutes a large market for pharmaceuticals (60% of the volume consumed in Economic Community of West African States (ECOWAS) sub-region). Furthermore, manufacturers and importers have vertical drug distribution channels for wholesalers, retailers and hospitals, with limited regulatory capacity. A Rational Drug Use survey conducted in 12 developing countries reported that, Nigeria had the highest number of medicines prescribed (3.8 drugs/ encounter) and third highest prescription of antibiotics. Regarding irrational medicine use behavior in the country, about 46.7% to 71.1% of

children aged five years and were given antibiotics without prescription, while only 68.3% of adults used antibiotics following a doctor's prescription. Factors contributing to the irrational use of antibiotics include the lower education level of caregivers, health insurance status of patients, and prescribers' characteristics such as longer years of practice and lack of specialization. Resistant bacteria are commonly recovered from livestock, food animals and their products as well as vegetables. The high levels of antibiotic residues in food animals and the low recovery of resistant organisms from wildlife, point to antimicrobial use in agricultural and veterinary practices as principal drivers of resistance. Resistant bacteria have also been recovered from presumed potable, soil, natural, wastewater sites and at aquaculture sites. This illustrates that antimicrobial resistance is highly prevalent in the country and a 'One Health' approach to resistance containment is Nigeria's best option.

2.3 Environmental Health

This is the branch of public health concerned with all aspects of the natural and built environment affecting human health. On the other hand, environmental protection is concerned with protecting the natural environment for the benefit of human health and the ecosystem. Environment and the factors associated with it are other parts of the causes of many epidemic diseases both in the developed and developing nations. In Nigeria, environmental health problems arise from population pressure on housing, poor environmental sanitation, coupled with lack of safe water and basic housing facilities. Despite the deplorable state of environmental health (lack of safe water, bad housing condition, and so on), there is no reliable and timely means of surveillance or any monitoring system.

Currently, environmental health surveillance has not commenced but there is a proposal to use a similar structure to the IDSR for environmental surveillance in Nigeria. It is proposed that environmental health officers (EHOs) stationed at the local government routinely collect environmental data; send to their state environmental officer (SHO) who compiles data for all the LGAs in the state before passing on the information to the national office Since 2010, major outbreaks of lead toxicity have been observed in northern Nigeria related to the processing of lead rich ore for the extraction of gold. Lead is a naturally occurring metal which though has beneficial uses, can be toxic. Exposure to lead is particularly harmful to children because their bodies are still developing, lead can cross

the placenta and be passed through breast milk while adults are most often exposed by work activities, consuming food or water contaminated by lead.

In Nigeria's Niger Delta region, the key environmental issues relate to the petroleum industry through oil spillage. Oil spillage has a major impact on the ecosystem into which it is released and may constitute ecocide. Immense tracts of the mangrove forests, which are especially susceptible to oil, have been destroyed. Spills in populated areas often spread out over a wide area, destroying crops and aquacultures through contamination of the groundwater and soils. The consumption of dissolved oxygen by bacteria feeding on the spilled hydrocarbons also contributes to the death of fish. In agricultural communities, often a year's supply of food can be destroyed instantaneously. Due to the nature of oil operations in the Niger Delta, the environment is growing increasingly uninhabitable. People in the affected areas complain about health issues including breathing problems and skin lesions; many have lost basic human rights such as health, access to food, clean water, and an ability to work. In 2017, there were reports of chlorine gas poisoning in both Jos and Kano following gas explosions in both cities. Signs of acute chlorine gas poisoning are primarily respiratory including sneezing, nose irritation, burning sensation, and throat irritation. Chronic exposure may lead to pulmonary problems like acute wheezing attacks, chronic cough with phlegm, and asthma.

Large populations of Nigerians live in poverty and do not have access to basic amenities such as food, safe water, sanitation and proper hygiene with resultant increased susceptibility to water-borne infections. Thus, there is an urgent need to invest more in environmental health and ensure every Nigerian has access to potable water, proper waste disposal mechanisms and proper environmental sanitation. This would go a long way in preventing spread of diseases.

2.4 Surveillance

2.4.1 Surveillance for Zoonotic disease

2.4.1.1 Human health

The Nigeria Centre for Disease Control (NCDC) is the country's national public health institute responsible for carrying out disease surveillance activities. This function includes surveillance of zoonotic diseases in human such as acute haemorrhagic fever syndrome, anthrax, Lassa fever, yellow fever, plague, and rabies using the national Integrated Disease Surveillance

and Response (IDSR) strategy. Event-based surveillance is also conducted at the national level to capture events using both automated and moderated search engines.

Reporting of zoonotic diseases within the country's surveillance system is conducted immediately (for epidemic- prone diseases), weekly or monthly, with set reporting timelines against which timeliness of reporting is measured. IDSR routine data on the 41 priority diseases is collected on a weekly and monthly basis and forwarded to LGAs using SMS or paper forms. The LGAs collate and forward to the state also by SMS and paper form for weekly reporting or via the new Surveillance Outbreak Response Management and Analysis System (SORMAS) database tool. The states enter the data using customised excel spreadsheet. NCDC has piloted and is rolling out an electronic based diseases surveillance and outbreak management SORMAS platform. This system will improve timeliness and quality of surveillance and effective management of disease outbreaks.

Among the IDSR priority diseases, the following prioritised zoonotic diseases are included:

1. Epidemic prone diseases
    a. Ebola, Yellow fever, Dengue, Lassa fever, Avian influenza

2. Other major diseases, events or conditions of public health importance
    a. Human rabies, Tuberculosis, Leptospirosis, Human African Trypanosomiasis, Typhoid Fever, Human Influenza, Schistosomiasis

3. Diseases or events of international concern
    a. Human influenza due to a new subtype, any public health event of international or national concern such as infectious zoonotic diseases or food borne diseases e.g. anthrax, plague, human influenza due to new subtype

Reference laboratories exist for all priority diseases at the federal government level and in academic institutions. Each laboratory deals with specific (not all) priority diseases such as the national influenza reference laboratory NCDC, Gaduwa and the three reference laboratories for Lassa fever at NCDC, Irrua and Lagos. Generally, the laboratory capacity and networks are weak and NCDC has a robust plan to strengthen public health laboratories in the country.

Gaps still exist in linking surveillance and laboratory information on disease surveillance in the country.

The public health workforce is enhanced by the participation of surveillance officers, State Epidemiologists, DSNOs and laboratorians in the frontline and advanced programs of the NFELTP. Since the training approach is multidisciplinary with a focus on One Health, medical doctors, veterinarians, laboratory scientists and environmental scientists are included in the various levels of epidemiology training. The training emphasises acquisition of necessary competencies in disease surveillance, investigation, analysis, evaluation, communication, management and critical appraisal / research. Trainees and graduates of the program have supported outbreak response to several zoonotic outbreaks including Lassa fever, monkey pox, rabies, yellow fever, dengue, Ebola virus disease among others.

Priority diseases, conditions and events for Integrated Disease Surveillance and Response (IDSR), 2018

EPIDEMIC PRONE DISEASES		DISEASES TARGETED FOR ERADICATION OR ELIMINATION		OTHER MAJOR DISEASES, EVENTS OR CONDITIONS OF PUBLIC HEALTH IMPORTANCE	
1.	Cholera	1.	Buruli ulcer	1.	Acute viral hepatitis
2.	Measles	2.	Drancunculiasi (Guinea Worm)	2.	Diabetes mellitus
3.	Meningococcal meningitis	3.	Leprosy	3.	Diarrhoea with dehydration less than 5 years of age
4.	Viral haemorrhagic fever Lassa Fever, Dengue)	4.	Lymphatic filariasis	4.	HIV/AIDs (new cases)
5.	Yellow fever	5.	Neonatal tetanus	5.	Hypertension
		6.	Noma	6.	Injuries (Road traffic accidents)
		7.	Onchocerciasis	7.	Malaria
		8.	Poliomyelitis[1]	8.	Malnutrtion in children under 5 years of age
		[1]*Disease specified by IHR (2005) for immediate notification*		9.	Maternal deaths
				10.	Mental Neurological & Substance Abuse (MNS) disorders (Epilepsy, Schizorpherinia, depression, etc.)
				11.	Human Rabies
				12.	Severe pneumonia in less than 5 years of age

EPIDEMIC PRONE DISEASES		DISEASES TARGETED FOR ERADICATION OR ELIMINATION	OTHER MAJOR DISEASES, EVENTS OR CONDITIONS OF PUBLIC HEALTH IMPORTANCE	
			13.	STIs
			14.	Sickle Cell Disorder
			15.	Trachoma
			16.	Human African Trypanosomiasis
			17.	Tuberculosis
			18.	Schistosomiasis
			19.	SARI
			20.	Diarrhoea with blood
			21.	Whooping cough (Pertussis)
			22.	Diphtheria
	Diseases or events of international concern		23.	Snake bites
1.	Human influenza due to a new subtype1		24.	Soil Transmitted Helminths
2.	SARS1		25.	Adverse Events Following Immunization (AEFI)*
3.	Smallpox[1]		26.	Asthma
4.	Any public health event of international or national concern (infectious, zoonotic, food borne, chemical, radio nuclear, or due to unknown condition–Anthrax, Plague)		27.	Typhoid Fever
	[1]*Disease specified by IHR (2005) for immediate notification*			**All serious AEFIs shall be reported immediately*

2.4.1.2 Animal Health

Zoonotic disease surveillance in animal is coordinated by the Department of Veterinary and Pest Control Services under the Federal Ministry of Agriculture and Rural Development (FMARD). Trans-boundary Animal Diseases (TADs) and potential zoonotic diseases such as avian influenza, rabies, brucellosis, bovine tuberculosis and anthrax in animals are reported regularly through the National Animal Disease Information and Surveillance (NADIS) system. The system needs significant strengthening. The animal disease reporting forms are designed on MS Excel for data entries and analysis periodically. Reports from surveillance points such as abattoirs, live bird and livestock markets, control posts, animal health facilities and wild life parks are captured and reported

monthly, biannually and annually. Immediate notification is also conducted within 24 hours of confirmation of diseases or events that have high negative impact on public health and livestock production such avian influenza, rabies, anthrax etc.

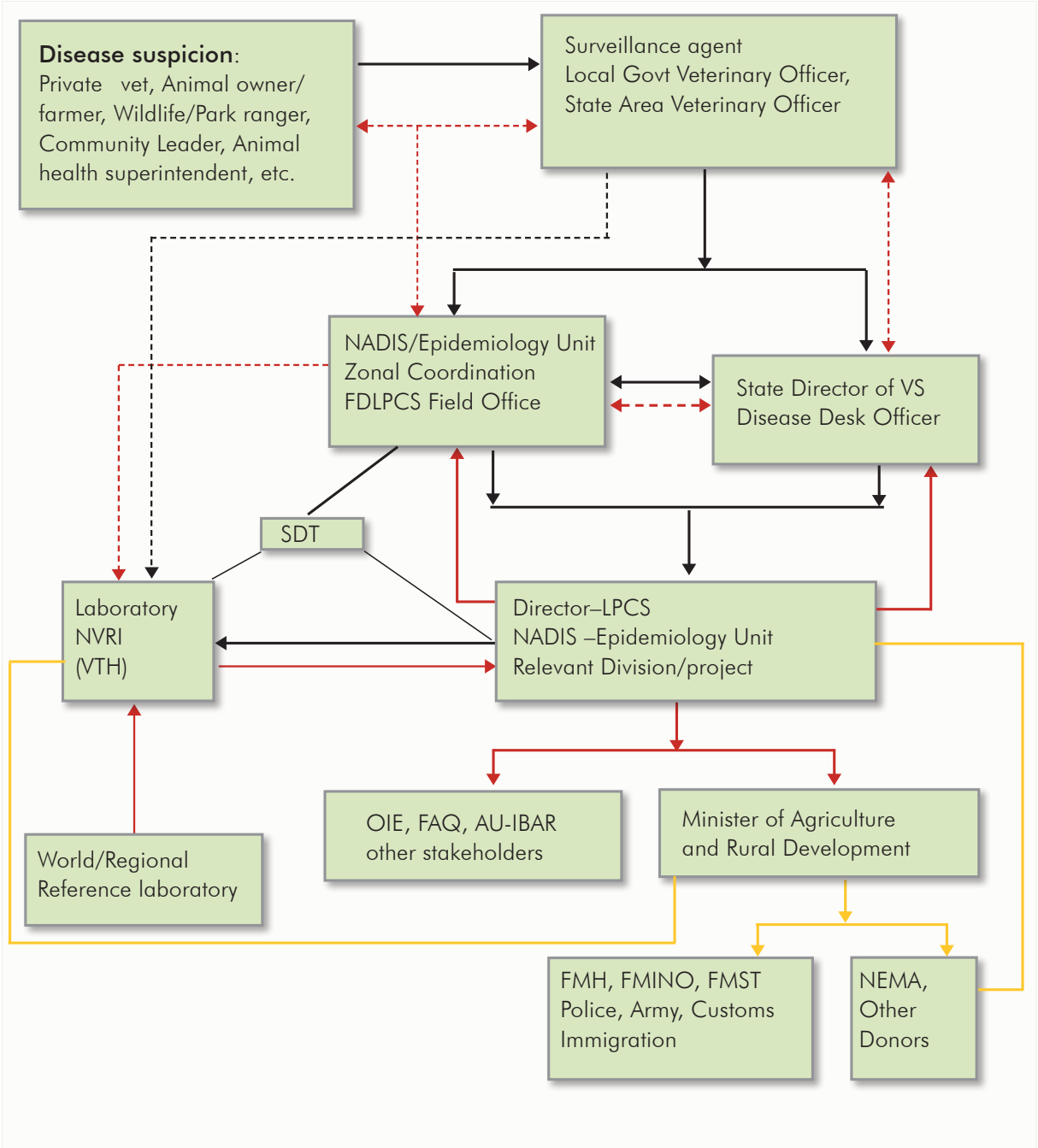
The country has adopted the Animal Resource Information System (ARIS) which was developed by the African Union Inter-African Bureau for Animal Resources (AU-IBAR) and being used by the surveillance officers for reporting animal diseases in all the states of the federation. The system is efficient and adaptable for country-specific real time surveillance activities. ARIS data is generated from veterinary facilities in hard copies and forwarded to the State Director of Veterinary Services (DVS). Epidemiology Officers collate and key into ARIS. Reports are validated by the Director of Veterinary Services before sending to AU-IBAR and OIE through the ARIS and World Animal Health Information System (WAHIS) platform respectively. Neither event-based nor syndromic surveillance is well established in the animal health sector.

There is no routine sharing of surveillance information about zoonotic diseases between the Ministry of Health and the Ministry of Agriculture. The laboratory system in the National Veterinary Research Institute (NVRI) is integrated with the animal surveillance system but laboratory confirmation of outbreaks of zoonotic diseases is limited.

Furthermore, laboratory information or specimens related to zoonotic diseases are not routinely shared between the NCDC and FMARD.

The animal health sector in Nigeria is largely rudimentary since a majority of the ownership is solely in the hands of pastoralists who still practice an extensive animal management system with little or no veterinary care. Compounding this problem is limited government funding for the sector. Issues related to animal health are often on ad-hoc basis due to a lack of an organized structure leading to several unreported disease outbreaks. Resulting from this therefore, animals with diverse diseases are potentially imported into or exported out of the country due to porous borders and this is accentuated by limited implementation of existing regulatory policies and guidelines by relevant government agencies. Due to these situations, diverse populations and species of animals in the country are infected with several diseases leading to high morbidity and mortalities (sometimes resulting in reproductive and production losses) which

ultimately result in huge economic losses. Overall, failure in surveillance of animal health results in human health problems leading to challenges of food security and food safety as well as problems bordering on zoonotic disease spill-over to human populations.



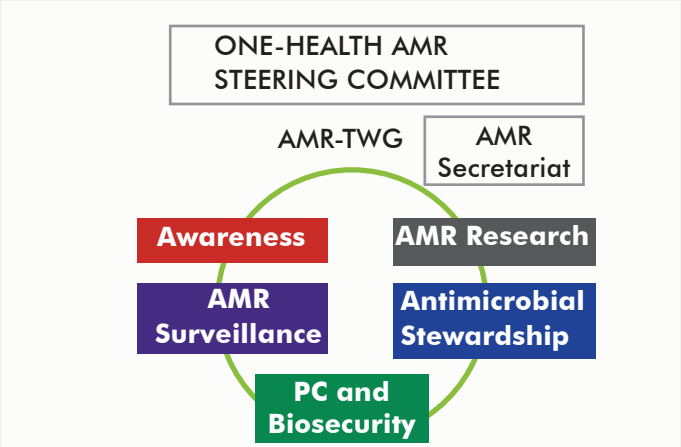
2.5 AMR Surveillance

The Honourable Minister of Health, on November 26, 2016, approved the establishment of Nigeria's National AMR Coordinating Body at the Nigeria Centre for Disease Control (NCDC). A National AMR Technical Working Group (AMR-TWG) was created, comprising stakeholders from human health, animal health, food animal production and environment sectors. The AMR-TWG was tasked with conducting a situation analysis of AMR in Nigeria.

Several gaps were identified from the situation analysis which include:

1. Poor public awareness and weak coordination of AMR awareness activities by government and partners such asvertical disease control programmes.
2. Poor One Health coordination of animal and human national disease surveillance systems.
3. Non-existence of a national AMR laboratory surveillance system and no dedicated funding for AMR control activities.
4. Non-existence of a national IPC coordinating bod and poor budgetary support for IPC activities in health facilities.
5. Lack of antimicrobial stewardship in both private and public sectors.
6. Studies on the health and economic impact of AMR inNigeria are non-existent with poor coordination of research on antibiotic use.

Following the identification of these gaps, the AMR-TWG decided on a governance structure for Nigeria. This included the need for a Steering Committee that will support and guide for AMR control activities. The committee will include representatives of Ministries, Departments and Agencies (MDAs), regulatory bodies, the private sector, academia from human, animal, environmental health and food safety institutions and partners.



The focus areas were developed based on identified priority gaps. The strategic interventions used a 'One Health' approach, aimed at implementing proposed actions by strengthening and utilizing existing national systems and creating new structures where they do not exist.

Strategic Interventions

Increase Awareness	• Increase awareness of AMR among Nigerians
	• Improve knowledge of AMR and related topics
Build AMR surveillance	• Strengthen institutional capacities for AMR detection
	• Build One Health laboratory infrastructure
	• Contribute to Global AMR surveillance
Prevent infections	• Strengthen IPC in healthcare facilities and communities
	• Promote food safety and biosecurity at farms
	• Improve environmental sanitation
	• Increase the use of vaccines in humans and animals
Ensure rational antimicrobial use	• Improve access to quality antimicrobial agents
	• Promote One Health antimicrobial stewardship
	• Strengthen regulatory agencies across all sectors
Invest in research	• Promote use of innovative investment channels
	• Incorporate One Health AMR research into training
	• Encourage development of antibiotic alternatives and new AMR diagnostics

2.6 IHR 2005 Enactment and Implementation

The International Health Regulations (IHR) is a set of regulations adopted by 194 WHO Member States to govern surveillance of public health emergencies of international concern. They were enacted in 2005 and came into force on 15 June 2007 and are legally binding for WHO Member States. In 2006, the Resolution AFR/RC56/R2 of the Regional Committee for Africa in Addis Ababa called for the implementation of the IHR (2005) in the context of the IDSR.

IHR 2005 has an expanded scope to include all public health emergencies of International concern (including zoonoses). Successful implementation of IHR requires the fulfilment of 8 core capacities: legislation, policy and coordination, surveillance, preparedness, response, risk communications, laboratory and human resources.

2.7 Nigeria IHR Core capacities assessment

The Joint External Evaluation (JEE) is an assessment of a country's capacity to prevent, detect, and respond to public health threats as part of the International Health Regulations (IHR 2005) monitoring and evaluation framework. Nigeria JEE was conducted in June 2017.

2.7.1 Key JEE Findings

Nigeria has made commendable progress in bio-surveillance for vertical diseases such as polio, TB, HIV/AIDS; response to PHEICs like Ebola, Lassa fever, meningitis, and cholera. Nigeria has several Points of Entry (PoEs) that are already involved in commendable routine (screening, have holding areas) and emergency actions. However, additional investments are required to attain higher IHR compliance which include finalisation of the legislative approval for the Nigeria Centre for Disease Control (NCDC) which has recently been achieved; strengthening laboratory capacity, especially specimen shipping, transportation and referral; formulating, costing, implementing, monitoring and evaluating all hazard national action plan for health security aligned with sector strategies; strengthening inter-sectoral collaboration for emergency response particularly between human and animal health, the environmental sectors and security agencies; scaling up, enhancing and sustaining the Integrated Disease Surveillance and Response (IDSR) nation-wide at all levels (Federal State, LGA, health facilities), capitalising on the polio investments; and developing and implementing a comprehensive public health workforce strategy.

The following observations were made on the country's capacity to handle public health threats including Zoonotic Events (ZE):

Joint External Evaluation of IHR Core Capacity in Nigeria, June 2017

TECHNICAL AREAS	INDICATORS	SCORE
National legislation, policy and financing	P.1.1 Legislation, laws, regulations, administrative requirements, policies or other government instruments in place are sufficient for implementation of IHR (2005)	1
	P.1.2 The State can demonstrate that it has adjusted and aligned its domestic legislation, policies and administrative arrangements to enable compliance with IHR (2005)	1
IHR coordination, communication and advocacy	P.2.1 A functional mechanism is established for the coordination and integration of relevant sectors in the implementation of IHR	2
Antimicrobial resistance	P.3.1 Antimicrobial resistance detection	2
	P.3.2 Surveillance of infections caused by antimicrobial-resistant pathogens	2
	P.3.3 Health care-associated infection (HCAI) prevention and control programmes	2
	P.3.4 Antimicrobial stewardship activities	2
Zoonotic diseases	P.4.1 Surveillance systems in place for priority zoonotic diseases/ pathogens	2
	P.4.2 Veterinary or animal health workforce	3
	P.4.3 Mechanisms for responding to infectious and potential zoonotic diseases are established and functional	1
Food safety	P.5.1 Mechanisms for multisectoral collaboration are established to ensure rapid response to food safety emergencies and outbreaks of foodborne diseases	2
Biosafety and biosecurity	P.6.1 Whole-of-government biosafety and biosecurity system is in place for human, animal and agriculture facilities	1
	P.6.2 Biosafety and biosecurity training and practices	1
Immunization	P.7.1 Vaccine coverage (measles) as part of national programme	3
	P.7.2 National vaccine access and delivery	4
National laboratory system	D.1.1 Laboratory testing for detection of priority diseases	3
	D.1.2 Specimen referral and transport system	1
	D.1.3 Effective modern point-of-care and laboratory-based diagnostics	2
	D.1.4 Laboratory quality system	2

Joint External Evaluation of IHR Core Capacity in Nigeria, June 2017

TECHNICAL AREAS	INDICATORS	SCORE
Real-time surveillance	D.2.1 Indicator- and event-based surveillance systems	3
	D.2.2 Interoperable, interconnected, electronic real-time reporting system	2
	D.2.3 Integration and analysis of surveillance data	3
	D.2.4 Syndromic surveillance systems	3
Reporting	D.3.1 System for efficient reporting to FAO, OIE and WHO	3
	D.3.2 Reporting network and protocols in country	2
Workforce development	D.4.1 Human resources available to implement IHR core capacity requirements	3
	D.4.2 FETP or other applied epidemiology training programme in place	4
	D.4.3 Workforce strategy	2
Preparedness	R.1.1 National multi-hazard public health emergency preparedness and response plan is developed and implemented	1
	R.1.2 Priority public health risks and resources are mapped and utilised	1
Emergency response operations	R.2.1 Capacity to activate emergency operations	2
	R.2.2 EOC operating procedures and plans	2
	R.2.3 Emergency operations programme	3
	R.2.4 Case management procedures implemented for IHR relevant hazards.	2
Linking public health and security authorities	R.3.1 Public health and security authorities (e.g. law enforcement, border control, customs) are linked during a suspect or confirmed biological event	1
Medical counter -measures and personnel deployment	R.4.1 System in place for sending and receiving medical countermeasures during a public health emergency	1
	R.4.2 System in place for sending and receiving health personnel during a public health emergency	1
Risk communication	R.5.1 Risk communication systems (plans, mechanisms, etc.)	1
	R.5.2 Internal and partner communication and coordination	3
	R.5.3 Public communication	2
	R.5.4 Communication engagement with affected communities	3
	R.5.5 Dynamic listening and ruMoUr management	3
Points of entry	PoE.1 Routine capacities established at points of entry	1
	PoE.2 Effective public health response at points of entry	1

Joint External Evaluation of IHR Core Capacity in Nigeria, June 2017

TECHNICAL AREAS	INDICATORS	SCORE
Chemical events	CE.1 Mechanisms established and functioning for detecting and responding to chemical events or emergencies	1
	CE.2 Enabling environment in place for management of chemical events	2
Radiation emergencies	RE.1 Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies	3
	RE.2 Enabling environment in place for management of radiation emergencies	3

2.7.2. Core Capacities Assessment Strengths

- Nigeria Integrated Disease Surveillance and Response (IDSR) in the Ministry of Health/NCDC is well established and routinely includes information of human cases of limited number of zoonotic diseases.
- The National Animal Disease Information System (NADIS) is established in the Ministry of Agriculture and Rural Development.
- Surveillance for avian influenza among poultry is established.
- Surveillance and public health management of dog bites, including testing of dogs for rabies, is available.
- Situational awareness reports were produced. These include quarterly newsletter by FMARD and Nigerian Agricultural Quarantine services and the Weekly Epidemiological Report by NCDC.
- The NFELTP within NCDC/FMoH is well established and has trained many veterinarians in the FET advanced and frontline training programs
- Public health training of veterinarians is also conducted by McArthur Foundation at the Ahmadu Bello University.
- Veterinarians trained in public health, including graduates of NFELTP programs, are employed by the Ministry of Agriculture and Rural Development at the national and state levels.
- Joint field investigations of outbreaks of zoonotic diseases, including Lassa fever and rabies, have been conducted, particularly by the NFELTP, and have included veterinarians.
- A policy document and a response plan exist for avian influenza and rabies

guidelines have been developed and are awaiting approval.

- A National Action Plan on AMR, with a One Health approach, was developed, approved, and submitted to WHO in May 2017.
- An AMR National Reference Laboratory, though interim, has been designated and nine sentinel laboratories for AMR surveillance among selected pathogens have been identified.
- The National Action Plan on AMR includes surveillance for human infections caused by AMR pathogens.
- Nigeria is enrolled in the WHO GLASS surveillance network for AMR.
- A situation analysis which details the most common human pathogens, and prevalence of resistance patterns of these pathogens, has been conducted.
- Passage of the National Policy for Food Safety and its Implementation Strategy in 2016.
- Creation of the National Food Safety Management Committee (NFSMC) and the InterMinisterial Committee on Food Safety.
- Outbreak investigations by NCDC are robust and timely, although a multisectoral response system for foodborne diseases and food safety emergencies is not established.
- A laboratory inspection system including EQA is available but restricted to private laboratories.
- NCDC plays an important role in the capacity enhancement of the laboratory testing for the priority diseases in the country.
- The surveillance systems are able to detect public health threats.
- The animal health sector conducts surveillance on select notifiable diseases.
- Weekly surveillance epidemiological reports are produced at national level and disseminated in real time.
- Existence of surveillance units in human (IDSR) and animal health (NADIS) sectors.
- Existence of IHR NFP and OIE delegates in the FMoH and Ministry of Agriculture. The focal points are linked to learning package and best practices as provided by WHO, OIE and FAO.
- The country has demonstrated ability to identify a potential PHEIC and file a report to WHO and similarly to the OIE for relevant zoonotic disease within 24 hours of confirmation and similarly to the OIE.

2.7.3 Areas that Need Improvement

- The highest priority zoonotic diseases for surveillance have not been formally identified through a One Health approach involving input from both the Ministry of Health and Ministry of Agriculture.
- A robust surveillance system for the top priority zoonotic diseases in animals is lacking in the Ministry of Agriculture.
- There is no routine forum or formal mechanism for sharing of results, surveillance data, reports or laboratory specimens between the Ministry of Agriculture and the Ministry of Health.
- Given the large size of Nigeria, more veterinarians at central, state and district levels need to be trained in public health through the FETP advanced and Frontline programs.
- To meet the goal of having a trained veterinarian at all LGA/district levels, field epidemiology training is particularly needed for veterinarians from district and state levels.
- Policy documents and response plans for selected priority zoonotic diseases are needed.
- Enhanced capacity for timely and coordinated inter-sectoral outbreak response and field investigations for priority zoonotic diseases is needed
- Inter-sectorial collaboration on food safety and food-borne diseases is inadequate. Overall need for food safety capacity building in the public health, food safety and agriculture and animal health sectors at central, state and district levels.
- Foodborne disease surveillance, monitoring of contaminants in the food chain, and outbreak/ emergency investigation and response capacities need strengthening.
- Laboratory infrastructure, equipment and expertise for food safety is inadequate
- Data on antimicrobial use, including prescription patterns, are lacking - for both humans and food animals. The enforcement of the need for a rational prescription for antimicrobial use in humans is lacking. There is no requirement that antimicrobials used in animals be available only by prescription and therefore antimicrobials are widely available, over the counter, for use in animals.

2.7.4 Key Priority Actions Recommendations as it Relates to One Health

- Establishment of a One Health platform for intersectoral collaboration of outbreak responses that involve the human and animal sectors.

- Adopt measure behaviors, policies and/or practices that minimize the transmission of zoonotic diseases from animals into human populations.
- Enhance collaboration between Ministry of Health and Ministry of Agriculture at the national, state and local government levels.
- Strengthen linkage between public health and animal health laboratories.
- Enhance surveillance of zoonotic diseases by holding a meeting of appropriate stakeholders to identify the top priority zoonotic diseases to include in zoonotic disease surveillance system
- Put in place a robust surveillance system for the highest priority zoonotic diseases in animals which is lacking in the Ministry of Agriculture.
- There should be routine forum or formal mechanism for sharing of results, surveillance data, reports or laboratory specimens between the Ministry of Agriculture and the Ministry of Health.
- Mechanisms for responding to infectious and potential zoonotic diseases established and functional.
- Policy documents and response plans for selected priority zoonotic diseases are needed.
- Enhance capacity for timely and coordinated intersectoral outbreak response and field investigations for priority zoonotic diseases is needed.
- Develop integrated zoonotic disease surveillance system
- Strengthen laboratory detection for priority zoonotic diseases/pathogens
- Strengthen technical capacity for animal health workforce (Zoonotic disease control, communications, RDTs, etc)
- Develop risk mapping for highest priority zoonotic diseases using One Health approach
- Build technical capacity for zoonotic disease among Disease Surveillance and Notification Officers and Animal Surveillance Officers at LGA level

2.7.5 SWOT Analysis of One Health in Nigeria

THEMATIC AREAS	STRENGTHS AND OPPORTUNITIES	WEAKNESS AND THREATS
Surveillance and laboratory	• Availability of IDSR and NADIS platforms for disease surveillance reporting	• Inadequate logistics for surveillance officers to carry out their duties (inadequate funding) • Poor inter-sectoral collaborations on surveillance activities Weak RRT at LGA levels

SWOT Analysis of One Health in Nigeria

THEMATIC AREAS	STRENGTHS AND OPPORTUNITIES	WEAKNESS AND THREATS
Surveillance and laboratory	• Availability of laboratories and equipment to handle some disease agents • Availability of trained laboratory personnel • Availability of rapid response teams from LGA to National levels • Availability of disease surveillance officers/agents • Availability of trained field epidemiologists and the NFELTP training. • Availability of interested partners supporting surveillance of priority diseases e.g. SORMAS, WHO, UMB, AFENET • Collaboration with partners on training of Lab staff and supply of consumables, external quality assurance • Research opportunities • Networking of Laboratories through tools like BLISS and ARIS used to connect the human and animal Labs and exchange of information Incoming REDISSE program	• Inadequate funding for laboratory maintenance and stocking of consumables • Poor training of low-level surveillance officers • Inadequate surveillance tools • Inadequate tools for data management • Lack of human resources for equipment maintenance in the laboratories • Poor quality management system in the laboratories • Poor, late sample transportation system • Poor, late and incomplete reporting • Poor harmonisation of data (parallel programmes and reporting systems) • EPR committee meets only during outbreaks • Donor fatigue • Global economic recession • Insecurity and political instability in the country • Poor border control • Emerging and re-emerging zoonotic disease
Training and research	• Existing One Health problems (diseases, pathogens, AMR, environmental risk factors, biosafety, biosecurity issues) Human Resource – Availability of trainers and trainees – Mobilise during emergencies – Universities – Research institutes and other tertiary institutions – NFELTP • Research expertise – Existing capacity – Laboratory network	• Inadequate infrastructure • Poor funding • Poor enabling environment for research (lack of motivation, incentives) • High turn-over/brain drain • Poor collaboration among researchers/institutions/ • Poor collaboration between researchers and policy makers • Poor uptake of research findings • Brain drain/high staff turn-over • Professional quackery • Insecurity/internal-external conflict

SWOT Analysis of One Health in Nigeria

THEMATIC AREAS	STRENGTHS AND OPPORTUNITIES	WEAKNESS AND THREATS
	• Partnership and technical support • (WHO, OIE, UNICEF, BEP, UNEP, FAO, etc.) • International professional exchanges • Available market for indigenous research ideas and products • Availability of research questions • More platforms for evidence-based training • Previous, demonstrable success stories	• Donor fatigue/lack of program ownership • Inter-professional rivalry/conflicts/ strife • Political instability/lack of government goodwill • Competing demands for limited resources
Governance and leadership	• Existence of human health, animal health and environmental health in the concurrent list of the government • Existence of three tiers of governance structure that involves the LGAs, State and Federal • Existence of legislation and policy on human health, animal health and environmental health • Establishment of NCDC that anchors One Health • Inauguration of One Health committee –AMR at the federal level • Nigeria is a signatory to GHSA • Acceptance of One Health concept by the academia • Introduction of monitoring system by the government to address corrupt practices • International and regional initiative on One Health concept • Strong linkages between health, agriculture and environment	• Lack of continuity of government policies • Lack of institutionalisationof One Health platform at the three tiers of government • Legislative process is expensive and cumbersome • Corruption • Insecurity • Professional rivalry • Labour unrest • Loss of interest • Lack of sustainability plan • Imposition of leadership

SWOT Analysis of One Health in Nigeria

THEMATIC AREAS	STRENGTHS AND OPPORTUNITIES	WEAKNESS AND THREATS
Resource mobilisation and communication	• Existence of natural resources e.g. oil • Presence of well-trained human resource • History of successful collaboration in healthcare delivery (Public-Private Partnership) • Vibrant private sector • Large population in country and a growing democracy • Large population in the Diaspora • REDISSE: regional disease surveillance system enhancement • Presence of multiple stakeholders/donors • Increasing incidence of emerging diseases/ trans-boundary animal diseases with funding support • Consistent private sector involvement in healthcare • Potential for future partnerships with global institutions in education and research • Membership/ influence in ECOWAS/ AU • Increasing foreign direct Investment	• Poor ownership by government • Duplication of roles/ functions by partners • Weak PPP in healthcare sector • Absence of budget lines/ poor funding • Mismanagement of resources • Brain drain • Poor micro economic policies • Inconsistency in government policies • Changing donor priorities • Political instability/ insurgency • Global economic recession • Corruption • Competition for funding from other developing countries • Poor international image

3.0 One Health in Nigeria

One Health is a multidisciplinary approach that implements programs, policies and research intersectorally – working at the local, regional, and global levels – with the goal of achieving optimal health outcomes, recognising the interconnection between people, animals, plants, and their shared environment.

Many One Health efforts have been implemented in Nigeria across disease surveillance, outbreak response and research. These include the response to H5N1 Avian influenza, Lassa fever, monkey pox, Ebola, rabies and the multi-disciplinary FETP training. Many of these efforts have partially involved the NCDC and DVPCS and therefore have not been institutionalised and sustained. In March 2018 with support from Global Implementation Solutions (GIS), NCDC and DVPCS jointly convened a One Health key stakeholders meeting in Nigeria. The stakeholders were drawn from government ministries, departments and agencies, development partners, academia, private sector and non-governmental organization. There was recognition that OH was the guiding principle for the new World Bank Regional Disease Surveillance Systems Enhancement (REDISSE), NAPHS and the National AMR Action Plan. These efforts needed to be expanded to an NCDC lead full-fledged One Health program. During the five-day meeting, the zoonosis disease priority list was reviewed and a situation analysis for OH implementation in Nigeria conducted. A 5-year strategic plan was developed with a one-year implementation plan.

3.1 Nigeria Centre for Disease Control

The Nigeria Centre for Disease Control (NCDC) was established in the year 2011 in response to the challenges of public health emergencies and to enhance Nigeria's preparedness and response to epidemics through prevention, detection, and control of communicable diseases. Its core mandate is to detect, investigate, prevent and control diseases of national and international public health importance. The mission for the NCDC next five years (2017-2021) is 'to protect the health of Nigerians through evidence-based prevention, integrated disease surveillance and response activities, using a One Health approach, guided by research and led by a skilled workforce.' The core functions of the NCDC include:

- Prevent, detect, and control diseases of public health importance
- Coordinate surveillance systems to collect, analyses and interpret data on diseases of public health importance
- Support States in responding to small outbreaks and lead the response to large disease outbreaks

- Develop and maintain a network of reference and specialsed laboratories
- Lead Nigeria's engagement with the international community on diseases of public health relevance
- Conduct, collate, synthesize and disseminate public health research to inform policy

3.2 Department of Veterinary and Pest control, Federal Ministry of Agriculture and Rural Development

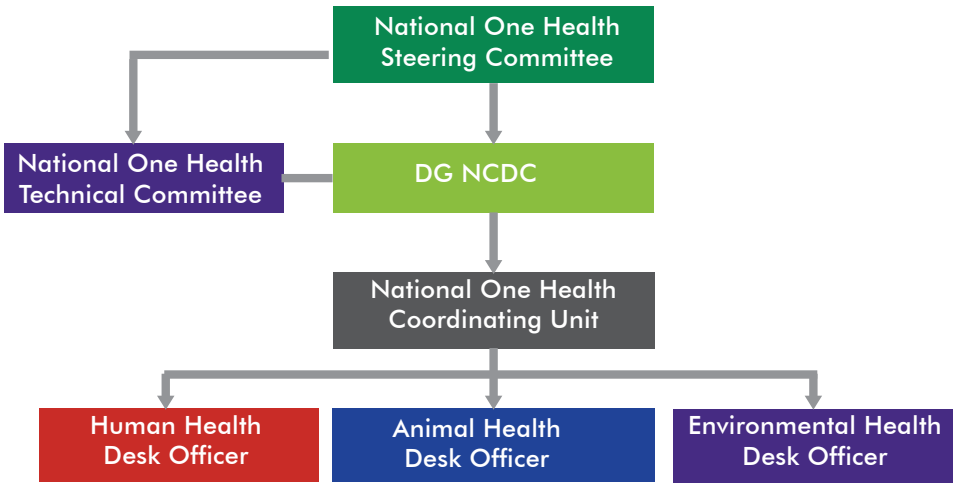
The Department of Veterinary and Pest Control Services (DVPCS) functions as the policy adviser to the Government on all animal health, safety and wholesomeness of food of animal origin for human consumption and pest control services. The Department draws its mandate from the Animal Diseases Control Act NO. 10 of 1988 and the World Organization for Animal Health (Office Internationale des Epizooties-OIE) standards, recommendations and guidelines for animal health and welfare.

It is involved in the prevention, control and eradication of trans-boundary animal diseases and pests, control of vector and vector-borne diseases, zoo-sanitary certification services, provision of veterinary public health services, food safety services and zoonotic diseases control to guarantee healthy national herd, wholesomeness of foods of animal origin, international trade in livestock and livestock products and the general economic well-being of the populace. The foregoing is achieved through:

- Building a strong herd-health that will guarantee increased productivity and output of all species of livestock in Nigeria;
- Guaranteeing the provision of wholesome food of animal origin to meet local demands and for export
- Ensuring optimum utilisation of the ecosystem for livestock production with minimal damage
- Carrying out effective surveillance on animal diseases and develop early warning early raction system
- Encouraging private sector participation in all aspects of animal health services including marketing
- Certification of animal and animal products for trade (import/export)
- Developing manpower and vocational skills for all stakeholders in the animal health sub-sector
- Effective control and management of vectors of animal diseases and transboundary animal pests
- Ensuring that animal health systems are founded on good governance enabled by

the appropriate legislation and the necessary means to enforce it

- Ensure and coordinate the registration of poultry and livestock farms in line with zoo-sanitary requirements
- Establishment of a network covering the whole country based on a tripod composed of official veterinarians, private veterinarians/para-veterinarians/community animal health workers and animal producers which ensure effective surveillance
- Ensuring early detection of an outbreak to enable a rapid response to potentially serious health events
- Facilitating the provision of bio-security and bio containment measures for infected farms to prevent pathogens from spreading and enabling them to be eliminated
- Ensuring rapid and fair financial compensation measures for producers whose animals have had to be culled due to health reasons
- Provision of vaccination for healthy animals whenever appropriate
- Ensuring good initial training and continuing education for all professionals
- Ensuring continuous applied research on control methods since pathogens are constantly adapting
- Strengthening and expansion of Veterinary Public Health Services to cover Meat Inspection Services, Milk Hygiene, Public Health Education, Environmental Hygiene and Laboratory Services to ensure the consumption of quality and safe Animals and Animal commodities
- Liaison with international and regional organisations (OIE, WTO, FAO, AU-IBAR, ECOWAS, Codex Alimentarius etc) on all matters relating to animals and animal health



Institutional/operational framework of National One Health Coordination Unit (NOHCU)

3.3 National One Health Coordinating Structure

The proposed One Health Platform will have three structures namely: National One Health Steering Committee (NOHSC), National One Health Technical Committee (NOHTC) and National One Health Coordination Unit (NOHCU) that are involved in providing leadership oversight in the planning, implementation and monitoring of One Health related activities in the country.

The Nigeria Centre for Disease Control (NCDC) will host the National One Health Coordination Unit (NOHCU) and coordinate the implementation. The unit will be coordinated by the global health security unit of the department of surveillance. The unit will be responsible in providing technical support to ensure OH approach to emergency preparedness and response. The DG NCDC will have oversight responsibilities of the operations of the Unit.

3.1.1 National One Health Steering Committee

The National One Health Steering Committee(NOHSC) will be constituted to provide leadership at the highest level of government for an early resolution of One Health public health crisis in the country.

The membership of the Committee comprises the following:

- Minister of Federal Ministry of Health (Chair)
- Minister of Federal Ministry of Agriculture and Rural Development (co-chair)
- Minister of Federal Ministry of Environment
- Minister of Federal Ministry of Finance
- Minister of Federal Ministry of Information
- DG of NCDC (Secretary)
- The Director of Public Health (FMoH)
- The Director of the Department of Veterinary and Pest Control Services, FMARD

Terms of reference

The Committee shall meet at least biannually and shall have the following functions:

a. Provide overall oversight and supervision to the OH technical committee
b. Review and approve proposed activities by the OH technical committees
c. Provide high-level support for implementation of OH activities in the country
d. Focus on policy issues related to the national One Health

e. Provide leadership at the highest level of government for an early resolution of public health crisis in the country
f. Provide technical assistance to neighboring countries as directed by Mr. President
g Report back regularly to Mr. President and the FEC on the implementation of the integrated One Health Strategic Plan

Meeting

- The National One Health Steering Committee will hold meetings twice a year but may hold additional extraordinary meetings as necessary if convened by the Chairman/Co-Chairman
- The quorum required is one third
- Notice of meetings to be provided at least two weeks before the scheduled date

3.1.2 National One Health Technical Committee

The National One Health Technical Committee (NOHTC) with representatives from the relevant ministries and agencies as well as development partners will be constituted to supervise the operation of NOHCU.

The membership of the Committee comprises of the following:

- DG NCDC (Chair)
- Chief Veterinary Officer (Co-Chair)
- Four (4) representatives from NCDC (Director of Surveillance; Director Prevention and Policy Coordination, Director, Emergency Preparedness and Response and Director of Laboratory)
- One representatives from the Federal Ministry of Health
- One representatives from the Federal Ministry of Agriculture and Rural Development
- One representative from NVRI
- One representatives from the Federal Ministry of Environment
- One representative from NEMA
- One representative from ONSA
- One representative from NESREA
- Representatives from the following partners: WHO, FAO, CDC, AFENET
- A representative from the academia

Terms of reference

The Technical Committee will have the following functions:

a. Support advocacy efforts to provide funds and other support for OH activities
b. Collaborate with the communication committee for effective dissemination of information on the status of the outbreak and its management
c. Ensure the successful implementation of the integrated plan by monitoring its implementation and reviewing the plan as may be necessary
d. Establish liaison with development partners to coordinate national and international efforts to contain disease outbreaks
e. Support multi-sectoral collaboration in management of public health emergencies
f. Provide oversight and technical support to ensure OH approach to emergency preparedness and response
g. Report back regularly to NOHSC on the implementation of the One Health activities
h. Ensure inter-ministerial cooperation and coordination
i. Ensure that Memorandum of Understanding (MoU) is signed for the operational framework of NOHCU among the implementing MDAs

Meetings

- The National One Health Technical Committee will hold meetings quarterly but may hold additional extraordinary meetings as necessary if convened by the Chairman/Co-Chairman
- The quorum required is one third
- Notice of meetings to be provided at least two weeks before the scheduled date

3.1.3 National One Health Coordinating Unit (NOHCU)

The National One Health coordination unit will have a National One Health coordinator – a senior technical officer from NCDC with qualification in public health, or veterinary public health and other relevant disciplines in One Health. The unit will have animal health desk, human health desk and environmental health desk in the implementation of One Health related activities with the relevant technical working groups. In addition, the unit will liaise with other relevant sectors to provide technical support in the containment of disease outbreaks and to ensure

effective inter-agency collaboration under the supervision of the DG NCDC.

Membership of National One Health Coordination Unit comprise the following;

- One Health Coordinator from NCDC assisted by
- Desk officers in human health, veterinary public health, environment health and other disciplines related to One Health.

Terms of Reference

a. Provide secretariat support to the technical and steering committees
b. Support the development of interoperable, multi-sectoral system capable of preventing, detecting and responding promptly to infectious disease outbreaks
c. Enhance collaborations between animal, human and environment sectors for control of endemic zoonoses and outbreak response.
d. Prepare annual work plans
e. Coordinates regular stakeholders meeting to share information
f. Develop quarterly and annual progress reports on OH activities
g. Facilitate liaison between NCDC as the IHR/NFP and relevant MDAs
h. Facilitate the utilisation of OH approach in outbreak response activities
i. Review and prepare technical information and documentation
j. Ensure replication and implementation of the same OH structures at state and local government levels

4.0 One Health Strategic Plan

4.1 Vision, Mission, Goals and Core Values of One Health

4.1.1 Vision

To be a nation of healthy people and healthy animals living in a balanced ecosystem

4.1.2 Mission

To build a strategic, dynamic and functional platform that advances human, animal and environmental health through multidisciplinary and intersectoral collaboration

4.1.3. Goals

- A sustainable and institutionalised One Health platform at all government levels
- A strategic, integrated, safe and secure research agenda and sustained capacity for implementation of OH initiative in Nigeria
- Increased awareness on One Health for all stakeholders
- Enhanced Government and other stakeholders' commitment and support for OH platform
- Effective prevention, detection and response to public health threats through the One Health approach

4.1.4 Core Values

1. ***Partnerships*** – Working together to advance human, animal and environmental health
2. ***Accountability*** – Acknowledging and accepting responsibility for One Health activities by all stakeholders
3. ***Integrity*** – Promotion of ethical values and standards in OH activities
4. ***Equity*** – Fair and just actions that promote good health and preserve natural resources for future generations
5. ***Coordination*** – Bringing together all stakeholders in OH to work harmoniously
6. ***Innovation***- Adoption of new and improved approaches and processes for addressing OH issues
7. ***Sustainability*** – Ensure continuous availability of resources, capacities and processes for the OH approach.

4.1.5 Themes and Thematic Goals

The strategic plan is divided into the following thematic areas and goals:

1. ***Surveillance and Laboratory***
    a. *Thematic Goal:* Effective prevention, detection and response to public health threats through the One Health approach
2. ***Training and Research***
    a. *Thematic Goal:* A strategic, integrated, safe and secure research agenda and sustained capacity for implementation of OH initiatives in Nigeria
3. ***Governance and Leadership***
    a. Thematic Goal: A sustainable and institutionalised One Health platform at all government levels
4. ***Communication***
    a. *Thematic Goal:* Increased awareness on One Health for all stakeholders
5. ***Resource Mobilisation***
    a. *Thematic Goal:* Enhanced Government and stakeholder commitment and support for the One Health platform

4.1.6 Guiding Principles

The following principles will guide the implementation of this plan:

1. Prevention and control of public health events including zoonoses is a national public good and requires strong political and financial commitment at all levels of government
2. Sustainable utilisation of existing institutions and whenever possible drawing on lessons learned
3. Use of a multidisciplinary approach to realise technical, political, and regulatory frameworks to effectively manage public health events including zoonoses.
4. Recognition and respect for cultural diversity and human rights.

5.0 Five-Year Strategic Plan for One Health in Nigeria

GOAL 1: Sustainable and institutionalised One Health platform at all government levels

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES	MONITORING INDICATORS	YR 1	YR 2-3	YR 4-5
1. To constitute standing coordination committee by 3rd Quarter of 2019 for the establishment of One Health platform	Develop a draft of the structure to be validated by appropriate government officials	1. Define the structure for the committee	Structure defined	x		
2. To develop an institutional framework on operation-alisation of One Health in Nigeria by the 4th Quarter of 2019	Engage in country experts to perform situation analysis and facilitate community involvement and buy–in Compose a legal and technical team to develop concept note and MoU Engage stakeholders to attend meeting	1. Perform situation analysis of OH in Nigeria 2. Develop a concept note on operationalisation of OH 3. Adopt and implement a set of inter-agency Memorandum of Understanding (MoU) to define areas for collaboration and coordination on One Health activities in the 1st Quarter of 2020. 4. Conduct consultative meetings of stakeholders quarterly	Situation analysis performed Concept note developed MoU signed Consultative meetings held	x x x x	 x	
3. Institutionalise One Health concept among line Ministries in 36 States and the FCT	Engage the states through the National Councils (NCARD, NCH and NCE) to replicate One Health at states and LGA levels	1. Develop a joint Council memo on One Health 2. Presentation of the memo at the National Councils (NCARD, NCH and NCE) 3. Presentation of the approved memo to the Council of States	Council memo developed Memo presented Memo presented to Council of States	x x x	 x x	
4. To develop an advocacy and sensitisation plan for the key stakeholders by 2nd Quarter of 2020	Create awareness among political class for buy-in	1. Decide on target groups and identify focal points within the groups (stakeholders) 2. Develop and test the advocacy messages 3. Engage relevant groups and associations	Target groups /focal person identified Advocacy message developed Relevant groups and associations engaged		x x x	

GOAL 2: A strategic, integrated, safe and secure research agenda and sustained capacity for implementation of OH initiatives in Nigeria

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES	MONITORING INDICATORS	YR 1	YR 2-3	YR 4-5
1. To have a 5-year OH research agenda for Nigeria by the 1st Quarter of 2019 using the Nigeria prioritised zoonotic disease list	Engage relevant OH stakeholders (institutions, researchers and subject matter expert) to develop OH research agenda	1. Draft list of relevant OH stakeholders to be involved/ engaged in the process establishment	List drafted	x		
		2. Develop agenda and templates to be used for the development of the OH research agenda	Agenda and template developed	x		
		3. Organise a 3-day residential retreat for the relevant stakeholders to draft the research agenda	3-day residential retreat conducted	x		
		4. Share the e-draft research agenda with a wider stakeholder forum (local and international) for review and comments/ inputs	E-draft agenda shared		x	
		5. Conduct a half-day launch of the research agenda	Research agenda launched		x	
		6. Two-day TWG meeting to prepare for the launch and subsequently revise agenda	Two-day technical meeting held		x	
		7. Set up OH research fund and board that will support and manage OH grants	Research fund and board established		x	
2. To promote incorporation of OH into the curriculum of medical, veterinary and environmental health and life science disciplines in NUC by 4th Quarter of 2019	Engage relevant stakeholders to develop and advocate for OH curriculum inclusion	1. Development of pre -service curriculum	Pre-service curriculum developed	x		
		2. Advocacy visits to NUC	Visit documented	x	x	
		3. Advocacy visits to regulatory bodies (MDCN, VCN, EHORCON, MLSCN)	Visit documented	x	x	
		4. Conduct a three-day workshop on curriculum review targeting relevant OH stakeholders	Three-day curriculum review workshop conducted		x	

GOAL 2: A strategic, integrated, safe and secure research agenda and sustained capacity for implementation of OH initiatives in Nigeria

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES	MONITORING INDICATORS	YR 1	YR 2-3	YR 4-5
3. To develop and implement by 4th Quarter of 2020, a One-Health modular in-service training for all levels of personnel within medical, veterinary and environmental health sectors at Federal, State and LGA	Use existing resources in the universities and relevant institutions to enhance the capacity of OH	1. Liaise with relevant stakeholders (e.g. NFELTP and associated universities) to identify suitable resource persons to establish the training program	Number of meetings held with stakeholders	x		
		2. Conduct one-week retreat to develop curriculum and training materials for the modular training	Retreat conducted	x		
		3. Engage experts to collate and review drafts of training modules and methodology	Training modules reviewed		x	
		4. Pilot training for 20 participants among relevant OH stakeholders	Training for 20 participants conducted		x	
		5. Train 200 participants per year with the developed module	Training for 200 participants conducted		x	x
		6. Develop sensitisation plan to be used at the meeting with policy makers	Sensitisation plan developed		x	
4. To establish a platform to enhance harmonious collaboration between researchers and policy makers for effective dissemination and uptake of research findings by the 4th Quarter of 2019	Engage OH researchers and policy makers to foster collaboration on research harmonization	1. Convene a two-day meeting of researchers and policy makers in different relevant institutions sensitise them on OH research agenda and facilitate agreement on an annual meeting for researchers and policy makers	Two-day meeting held	x		

GOAL 3: Increased awareness of One Health for all stakeholders

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES	MONITORING INDICATORS	YR 1	YR 2-3	YR 4-5
1. Improve public perception and awareness in zoonotic diseases and the One Health approach	Planning and instituting communication and advocacy strategies for OH	1. Put in place communication and advocacy strategies in place and conduct conferences, workshops, seminars at national, state and local government level	Advocacy strategy Document preparation for communication and its dissemination via conferences, workshops, seminars	x		x
		• Set up a media fellowship to showcase the human face of One Health	Media fellowship		x	x
		• Develop a dissemination plan on how to spread and create awareness	Number of media documentaries produced Developed plans available			
	Utilisation of the different social media at all levels to sensitise on One Health	• Design the materials (fliers, handbills, posters, social media etc.) to spread the One Health awareness	Number of print media documentaries disseminated			
		• Write and disseminate press releases on One Health	Number of press releases Number of approved press releases Number of locations where releases have been made Number of media houses that aired the messages	x	x	x
	Utilise contact person at community level	2. Plan and carry out town hall meetings with community stakeholders	Number of town hallmeetings conducted		x	x
		3. Design, develop, test, produce and distribute IEC materials in English, local languages, Pidgin English and on One Health	Number of IEC materials distributed	x	x	x
		4. Develop and disseminate standardised messages on One Health via multimedia platforms e.g. *Facebook, Whatsapp* etc.	Number of standard messages developed and number disseminated Availability of standard messages in various platforms	x	x	
		5. Engage policy makers, legislators, traditional leaders, community members in dialogue on One Health	Number of meetings held with policy makers, legislators etc	x	x	x
		6. Engagement of professional bodies/organisations in disseminating information on One Health e.g. CSOs, faith-based groups	Number of bodies engaged/ associations/organisations	x	x	x
	Communication advocacy Plan	7. Identify and engage a brand champion to represent OH at all levels	Brand champions identified		x	
		8. Develop a schedule for regular dissemination of radio jingles, TV adverts, SMS messages, short plays, role plays on One Health	Number of developed schedules		x	x

GOAL 3: Increased awareness of One Health for all stakeholders

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES	MONITORING INDICATORS	YR 1	YR 2-3	YR 4-5
2. Build capacity for sustainable communication activity at all tiers of government and among other stakeholders	Integrate OH communication activities at all levels of government	1. Identify health related programmes on media platforms for use in information dissemination	Number of health-related programmes identified	x	x	x
	Conducting ToT for effective succession OH training	2. The classes and categories of ToTs for use	Documentation and outcome of ToT on OH			
		3. Build capacity of media personnel for One Health reporting	Number of media personnel trained/ sensitised	x	x	x
	Communication/ training plan	4. Build capacity of technical officers for One Health communication packaging	Number of technical officers trained	x	x	x
	Conduct capacity Building capacity at the institutions among lecturers/ instructors for One Health	5. Minimum number of lecturers/instructors at institutions trained	Number of lecturers/instructors trained on, inventory of the institutions and lecturers instructors with OH expertise			
3. To develop and standardise a communication plan bring together a group of multi-sectorial technical/ communication experts to develop and standardise a One Health vocabulary and message plan within the first three months	Use existing dat bases and professional groups	1. Identify key stakeholders and experts to develop key One Health messages	Number of stakeholder identified	x		
	Workshop agenda, using the prioritised zoonotic diseases list and list of known and potential funding	2. Conduct 5-day workshop to adapt One Health key messages	Workshop held for 5 days	x		
	Identified list of key stakeholders and partners	3. Produce and disseminate printed copies of key messages for all stakeholders	Number of messages printed	x	x	x
	Journals, quarterly reports					

GOAL 4: Enhanced Government and other stakeholders' commitment and support for OH platform

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES	MONITORING INDICATORS	YR 1	YR 2-3	YR 4-5
1. To design and implement (operationalise) a framework for coordinating Donor/ private sector contributions 2. Identify and create linkages among partners on One Health resource	Community needs assessment, use of community informants	1. Develop a One Health profile/brochure that details successes and priority focus areas	Brochure produced	x	x	x
		2. Conduct a stakeholder analysis to review and Identify available/potential donors and private sector organisations	Stakeholder analysis conducted	x	x	x
		3. Conduct a mapping of animal, environmental and human health infrastructure, and resources	Mapping conducted	x	x	x
3. To increase stakeholder participation and ownership in management of resources for One Health	Engage stakeholders and establish guidelines for OH resource managment	1. Conduct quarterly meetings of stakeholders	Quarterly meetings conducted	x	x	x
		2. Institute rapid coordinated and functional	Functional team with their TOR	x	x	x
		3. Multidisciplinary OH teams with their TOR	Number of monthly feedback conducted	x	x	x
	Organise a system to ensure availability of OH resource	4. Provide monthly feedback on OH activities to all stakeholders	Workplans harmonise	x		
		5. Harmonise OH activities in workplans of governments and partner organisations				
		6. Set up PPP office			x	
4. Mobilise greater goverment commitment in sustained annual budgetary provision for One Health and increase donor funding to support One Health activities	Advocacy and lobbying for One Health funding	1. Conduct advocacy for the creation of a government budget allocation for OH	Advocacy meetings briefs and progress reports.	x		
		2. Conduct advocacy for increased donor funding to support One Health activities	Advocacy meeting briefs and progress reports.		x	

GOAL 5: Effective prevention, detection and response to public health threats through the One Health approach

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES	MONITORING INDICATORS	YR 1	YR 2-3	YR 4-5
1. To have in place integrated surveillance system for human, animal diseases and environmental hazards	To weave the existing systems into an integrated platform and bridge gaps where they exist.	2. Update the situational analysis	Situational analysis updated	x		
		3. Stakeholders meeting to harmonise the different surveillance systems to fit into the One Health platform	Stakeholder meeting held	x	x	
		4. Convene stakeholders meeting to adopt and validate report of the in country subject matters experts	Stakeholders meetings held		x	x
			Minutes of meetings, validated report	x	x	x
2. To strengthen laboratory capacity to diagnose priority zoonotic diseases and public health issues in human and animal and environmental threats in 40% of the states	Situation analysis of human, animal and environmental labs	1. Mapping of public health laboratories in the country	Mapping conducted	x		
	Enhancement and zoonotic diseases specific integration of lab diagnostics capacity informed by situation analysis	• Conduct needs assessment of public health laboratories in the country	Needs assessment conducted	x		
		• Validate report of the needs assessment	Validation conducted	x		
		• Enhance the laboratory physical infrastructure, equipment, reagents and consumables, quality management systems to sustain an integrated national laboratory network (develop sub activities)	Proportion of labs with improved infrastructure	x	x	
		• Train laboratory staff to detect in a safe, secure and timely manner priority zoonotic diseases threats	Number of laboratory staff trained	x	x	x
			Training report, list of participants	x	x	x

GOAL 5: Effective prevention, detection and response to public health threats through the One Health approach

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES	MONITORING INDICATORS	YR 1	YR 2-3	YR 4-5
3. Ensure an effective multi-sectoral EPR committee and RRT in the States and LGAs in all States and FCT	Identify and train animal health and environmental health teams into multi sectoral EPR committees at all levels	1. Identify and incorporate all relevant stakeholders into multi-sectoral EPR committee and RRT at all levels	Surveillance stakeholders identified	x	x	
			Surveillance stakeholders incorporated into multisectoral EPR	x	x	
		2. Map out potential hazard area	Mapping done	x	x	
		3. Identification and maintenance of available resources including medical counter-measure and stockpiling at all levels of government (sub activity for RRT)	Identification process conducted	x	x	
		4. Prepositioning of emergency supplies (drugs, PPE, medical consumables) for public health emergency response	Availability of emergency supplies in strategic locations	x	x	x
		5. Integrate animal and environmental emergencies into public health emergency operation centre at all levels of government	Integrated EOC at all levels of government	x	x	x
4. To increase reporting of disease from healthcare facilities including private health facilities to 80% within 2 years of implementation of the One Health platform	Increase number of reporting portals/outlets sites, tools, logistics	1. Conduct assessment of reporting in the human, animal and environmental surveillance system	Assessment conducted	x		
		2. Strengthen and improve consistency, completeness and timeliness in reporting from the local and State levels	Improved reporting attributes at all levels		x	
		3. Develop a framework for multi sectoral coordination in reporting and communication that will enable information sharing	Framework for multisectorial coordination developed	x	x	x
		4. Integrate human, animal and environmental sector data into a central data base	Integrated database available	x	x	x

6.0 One-Year Implementation Plan

GOAL 1: Sustainable and institutionalised One Health platform at all government levels		
STRATEGIC OBJECTIVE	**STRATEGY**	**ACTIVITIES**
1. To constitute standing\ coordination committee by quarter of 2019 for the establishment of One Health platform	Develop a draft of the structure to be validated by appropriate government officials	1. Define the structure for the committee
2. To promote incorporation of OH into the curriculum of medical, veterinary and environmental health and life science disciplines at NUC.	To develop an institutional framework on operationalisation of One Health in Nigeria by the 4th quarter of 2019.	1. Perform situation analysis of OH in Nigeria 2. Develop a concept note on operationalisation of OH 3. Conduct consultative meetings of stakeholders quarterly 4. Adopt the framework 5. Adopt and implement a set of inter-agency Memorandum of Understanding to define areas for collaboration and coordination on One Health activities in the 1st quarter of 2019.

GOAL 1: Sustainable and institutionalised One Health platform at all government levels							
SUB-ACTIVITIES	**MONITORING INDICATORS**	**VERIFICATION**	**Q1**	**Q2**	**Q3**	**Q4**	**RESPONSIBLE AUTHORITY**
1.Development of inclusion criteria for selection of members of the committee	Structure defined	Copy of document defining the structure		x			NCDC
2.Define TOR for the committee	TOR developed			x			NCDC
3. Inaugurate the committee	Committee inaugurated			x			NCDC

GOAL 1: Sustainable and institutionalised One Health platform at all government levels

SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
1. Procure the services of a Team of Consultants	Situation analysis performed	Report of situation analysis				x	
2. Review and validate the drawn-up concept note	Concept note developed	Copy of concept note					NCDC
3. Plan consultative meeting. Communicate to stakeholders. Hold meetings	Four consultative meetings held	Minutes of the consultative meetings					NCDC
4. Review of the framework by the TWG	Framework adopted	Copy of framework guidelines					
5. Presentation for adoption to the higher Management level							
6. Adopt an existing MoU into a template							
7. Compose a legal team to review an agreed template for the proposed MoU							
8. Draft the MoU							
9. Signing of MoU by FMoH, FMARD and FMEnv	MoU signed	Copy of signed MoU		x			The three line Ministries

GOAL 2: A strategic, integrated, safe and secure research agenda and sustained capacity for implementation of OH initiatives in Nigeria

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES
1. Provide a framework for collaborative research between human, animal and environmental health sectors on priority zoonotic diseases in Nigeria	Promote collaborative research between experts in human, animal and environmental health	1. Develop structure for research work 2. Adopt a framework to enhance coordination of research activities 3. Provide links for funding and collaboration 4. Develop thematic areas for research on One Health

GOAL 2: A strategic, integrated, safe and secure research agenda and sustained capacity for implementation of OH initiatives in Nigeria

SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
1. Conduct surveys to obtain baseline data based on One Health for priority zoonotic diseases in Nigeria	A standardised One Health research contigency plan/strategy.	Increased knowledge and capacity to tackle the zoonotic priority diseases that affect Nigeria.			A	A	NCDC (OHTWG)
2.Promote participation in One Health conferences							
3. Develop a One Health journal to boost research activities							

GOAL 2: A strategic, integrated, safe and secure research agenda and sustained capacity for implementation of OH initiatives in Nigeria

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES
2. To Identify novel animal reservoirs for priority zoonotic diseases in Nigeria	Provision of guidelines/protocol on coordinated research within and among institutions.	1. Formation of One Health research groups within and among institutions 2. Identify gaps 3. Identify areas of collaboration for One Health research 4. Identify available institutions for research purposes 5. Plan pet project to enhance to enhance strategic objective
3. To identify and describe animal-human-environment interphase for priority zoonotic diseases in Nigeria	Promote the development of tools and resources to improve the scope, scale and sensitivity of zoonotic disease surveillance in Nigeria.	1. Formation of One Health structure across all level
4. Mapping of animal reservoirs of priority zoonotic pathogens in Nigeria	Serological testing of animal species for zoonotic diseases in Nigeria.	1. Identify laboratories to be used for testing
	Develop research proposals exploring animal-human-environment interphases for priority zoonotic diseases in Nigeria e.g *Brucellosis, Anthrax*	1. Collate available data on available animal reservoirs in Nigeria

GOAL 2: A strategic, integrated, safe and secure research agenda and sustained capacity for implementation of OH initiatives in Nigeria

SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
1. Review guidelines/ protocol to suit identified gaps Delay in the adoption of the draft national One Health Strategic Plan.	Guidelines/ protocols on coordinated research on zoonotic diseases	Improved understanding of the risk factors for the animal to human transmission of zoonotic diseases.		A	A	A	NCDC (OHTWG)
1. Carry out One Health research at interphasal level	Sharing of Research findings with relevant stakeholders	Established research collaborations among the academia, governmental and non-governmental agencies.		A	A	A	
2.Describe the role of each level of interphase							
1.Conduct seroprevalence of priority zoonotic disease in Nigeria	Publications of findings in scientific journals.			X	X	X	
1.To identify ecological nicheof animal reservoirs for different priority zoonotic disease	Presentation in scientific conferences.			X	X	X	

GOAL 3: Increased awareness of One Health for all stakeholders

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES
1. Improve public perception and awareness in zoonotic diseases and the One Health approach	Utilisation of the communication plan	1. Identify a communication focal person
		2. Design, develop, test, produce and distribute IEC materials in English, local languages, Pidgin English and on One Health
		3. Design, develop, test, produce and distribute IEC materials in English, local languages, Pidgin English and on One Health
		4. Develop and disseminate standardised messages on One Health via multimedia platforms e.g. *Facebook, Whatsapp* etc.
		5. Engage policy makers, legislators, traditional leaders, community members in dialogue on One Health
		6. Engagement of professional bodies organisations in disseminating information on One Health e.g. CSOs, faith-based groups

GOAL 3: Increased awareness of One Health for all stakeholders

SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
1. Write a TOR	A communication focal person identified	TOR and letter of appointment		x			NCDC (Secretariat of OHTWG)
Publish online				x			
Recruit				x			
Appointment				x			
2. Identify thematic areas	Number of press releases	Number of approved press releases			x		
Develop content	Number of locations. where releases have been made.	Number of media houses that aired the messages			x		
Obtain approval and release	Transcript of press releases				x		
3. Identify and invite media	Number of IEC materials in English and Local languages distributed	Copies of IEC materials available in English and local languages					
Identify target audience							
Develop technical content							
Identify language experts							
Translate content into other languages							
Identify channels for dissemination							
Testing of IEC materials							
4. Identify thematic areas	Copies of standard messages developed	Number of standard messages disseminated Availability of standard messages in various platforms				x	
Develop technical content						x	
Identify language experts						x	
Translate content into other languages						x	
Identify channels for dissemination						x	
Testing of IEC materials						x	
5. Identify relevant stakeholders	Number of meetings held with policy makers, legislators, etc.	Minutes and attendance list					
Advocacy to stakeholders					x		
Share information and IEC on One Health					x		
Identify and discuss community involvement and need for community mobilisers					x		
6. Identify relevant stakeholders	Number of bodies engaged/ associations organisations	Minutes of engagement meeting with associations, bodies, organisations					
Advocacy to stakeholders							
Share information on One Health							
Identify and discuss organisational roles in One Health							

GOAL 3: Increased awareness of One Health for all stakeholders

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES
2. Build capacity for sustainable communication activity at all tiers of government and among other stakeholders	Integrate One Health communication activities at all levels of government	1. Identify health related programmes on media platforms for use in information dissemination
		2. Build capacity of media personnel for One Health reporting
		3. Build capacity of technical officers for One Health communication packaging
3. To develop and standardise a communication plan bring together a group of multi-sectorial technical/ communication experts to develop and standardise a One Health vocabulary and message plan within the first three months	Stakeholder engagement	1. Identify key stakeholders and experts to develop key OH messages
		2. Conduct five-day workshop to adapt One Health key messages

GOAL 3: Increased awareness of One Health for all stakeholders

SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
	Number of health related programmes identified	Relevant audio and visual materials			X		
1. Identify the participants/ key media personnell	Number of media personnel trained and sensitised	Training reports, list of participants, pictures			X		
2. Conduct a capacity needs assessment						X	
3. Conduct 2-day training of participants						X	
4. Identify technical officers	Number of technical officers trained	Training reports, list of participants, pictures			X		

GOAL 3: Increased awareness of One Health for all stakeholders

SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
	Number of stakeholders identified	List of stakeholders			X		
	Workshop held for 5 days	Workshop report			X		
1. Testing of the messages will be a sub-activity in the OP	Number of messages tested	Copy of tested message			X		
2. Produce and disseminate printed copies of key messages for all stakeholders	Number of messages printed	Report of message test, pictures and list of stakeholders who participated					
		Copies of printed messages available					
		Printed copy of brochure		X			

GOAL 4: Enhanced government and other stakeholders' commitment and support for OH platform

STRATEGIC OBJECTIVE	STRATEGY	ACTIVITIES
1. To design and implement (operationalise) a framework for coordinating donor/ private sector contributions	IIdentify and create linkages among partners on OH resource	1. Develop a One Health Profile/brochure that details successes and priority focus areas 2. Conduct a stakeholder analysis to review and Identify available potential donors and private sector organisations 3. Conduct a mapping of animal, environmental and human health infrastructure, and resources
2. To increase stakeholder participation and ownership in management of resources for OH	Engage stakeholders and establish guidelines for OH resource management	1. Conduct quarterly meetings of stakeholders 2. Ensure monthly feedback on OH activities to all stakeholders 3. Harmonise OH activities in workplans of governments and partner organisations
3. Mobilise greater Government commitment in sustained annual budgetary provision for OH and increase donor funding to support One Health activities	Advocacy and lobbying for OH funding	1. Conduct quarterly meetings of stakeholders 2. Ensure monthly feedback on OH activities to all stakeholders 3. Harmonise OH activities in workplans of governments and partner organisations 4. Conduct advocacy for increased donor funding to support One Health activities

GOAL 4: Enhanced government and other stakeholders' commitment and support for OH platform

SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
1. Identify priority focus areas and successe				x			
2. Design a brochure	Brochure produced	Printed copy of brochure		x			
3. Identify communication technical resource persons				x			
4. Conduct a 3-day workshop to develop One Health brochure/ advocacy briefs				x			
5. Conduct a one-day meeting	Stakeholder analysis conducted	Number of private organisations, donors identified, analysis report	x				
6. Identify target communities	Mapping conducted	Report of resource mapping				x	
7. Advocacy visits to community gatekeepers						x	
8. Participatory community needs assessment to map resources						x	
1. Quarterly meetings conducted	Minutes of quarterly meetings			x			
2. Number of monthly feedback conducted	Feedback report			x			
3. Workplans harmonised	Copies of harmonised workplans			x			
1. Advocacy meetings conducted	Advocacy reports						
2. Advocacy meetings conducted	Advocacy reports		x				
	Report of message test, pictures and list of stakeholders who participated		x				

7.0 Monitoring & Evaluation Framework for the One Health Strategic Plan

The implementation plan for the One Health (OH) strategic plan has activities, indicators, means of verification, time frame, and responsible party. The monitoring and evaluation plan will be based on the existing fields in the workplan. The plan will be evaluated twice a year (by the end of the 2nd and 4th quarters of the calendar year). The evaluation will be based on the yearly workplan.

All activities will be adjudged to be either completed, ongoing, pending, or planned

Completed

This refer to activities that have been completed based on the indicators and means of verification as at the time the evaluation is being carried out.

Ongoing

Ongoing activities are those that have commenced, but their timelines have passed or is extended based on a compelling need to do so.

Pending

This refer to activities that have not commenced even though their timelines have elapsed.

Planned

These are activities whose timelines has not been reached and thus there is no basis for starting them.

Reporting

The report of the evaluation will be based on the goals of the plan. For each goal, the proportion of activities under each goal that are classified as completed, ongoing, pending, or planned will be documented. Responsible persons will be interviewed to document why activities were pending or ongoing (for those whose timelines elapsed). This will enable identification of challenges and bottlenecks to implementation of the plan.

The midyear evaluation will be conducted by the NOHCU at the end of the second quarter, while the end of year evaluation will be conducted by an independent consultant at the end of the year.

STRATEGIC GOAL	STRATEGIC OBJECTIVES	STRATEGY	ACTIVITIES	SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
GOAL 1: Sustainable and institutionalised One Health platform at all government levels	1. To constitute standing coordination committee by 3rd Quarter of 2019 for the establishment of One Health platform.	Develop a draft of the structure to be validated by appropriate government officials	1. Define the structure for the committee	Development of inclusion criteria for selection of members of the committee	Structure defined	Copy of document defining the structure	x				NCDC
				Define TOR for the committee	TOR developed		x				NCDC
				Inaugurate the committee	Committee inaugurated		x				NCDC
	2. To promote incorporation of OH into the curriculum of medical, veterinary and environmental health and life science disciplines at NUC	To develop an institutional framework on operationalisation of One Health in Nigeria by the 4th Quarter of 2019.	Perform situation analysis of OH in Nigeria	Procure the services of a Team of Consultants	Situation analysis performed	Report of situation analysis				X	
			Develop a concept note on operationalisation of OH	Review and validate the drawn-up concept note	Concept note developed	Copy of concept note				x	NCDC
			Conduct consultative meetings of stakeholders quarterly	Plan consultative meeting. Communicate to stakeholders. Hold meetings	Four consultative meetings held	Minutes of the consultative meetings				x	NCDC
			Adopt the framework	Review of the framework by the TWG	Framework adopted	Copy of Framework Guidelines			x		OHTWG
			Adopt and implement a set of inter-agency Memorandum of Understanding to define areas for collaboration and coordination on One Health activities in the 3rd Quarter of 2019.	Presentation for adoption to the higher management level	MoU signed	Copy of signed MoU	x				The three line ministries
				Adopt an existing MoU into a template				x			
				Compose a legal team to				x			
				Review an agreed template for the proposed MoU				x			
				Draft the MoU				x			
				Signing of MoU by FMoH, FMARD and FMEnv				x			

STRATEGIC GOAL	STRATEGIC OBJECTIVES	STRATEGY	ACTIVITES	SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
GOAL 2: A strategic, integrated, safe and secure joint zoonotic research agenda and sustained capacity for implementation of OH initiatives in Nigeria	1. Provide a framework for collaborative research between human, animal and environmental health sectors on priority zoonotic diseases in Nigeria	1.Promote collaborative research between experts in human, animal and environmental health	1. Develop structure for research work 2. Adopt a framework to enhance coordination of research activities 3. Provide links for funding and collaboration 4. Develop thematic areas for research on One Health	1. Conduct surveys to obtain baseline data based on One Health for priority zoonotic diseases in Nigeria 2. Promote participation in One Health conferences 3. Develop a One Health journal to boost research activities	· A standardised One Health research contigency plan/strategy.	· Increased knowledge and capacity to tackle the zoonotic priority diseases that affect Nigeria.			A	A	NCDC (OHTWG)
	2 .To Identify novel animal reservoirs for priority zoonotic diseases in Nigeria	1. Provision of guidelines or protocol on coordinated research within and among institutions.	1. Formation of One Health research groups within and among institutions 2. Identify gaps 3. Identify areas of collaboration for One Health rese arch 4. Identify available institutions for research purposes 5. Plan pet project to enhance to enhance strategic objective	1. Review guidelines/ protocol to suit identified gaps Delay in the adoption of the draft national One Health Strategic Plan.	· Guidelines/ Protocols on coordinated research on zoonotic diseases.	· Improved understanding of the risk factors for the animal to human transmission of zoonotic diseases.		A	A	A	
	3 To identify and describe animal-human-environment interphase for priority zoonotic diseases in Nigeria.	1.Promote the development of tools and resources to improve the scope, scale and sensitivity of zoonotic disease surveillance in Nigeria.	1. Formation of One Health structure across all levels	1. Carry out One Health research at interphasal level 2. Describe the role of each level of interph ase	· Sharing of Research findings with relevant stakeholders	· Established research collaborations among the academia, governmental and non-governmental agencies.		A	A	A	

STRATEGIC GOAL	STRATEGIC OBJECTIVES	STRATEGY	ACTIVITES	SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
GOAL 2: **A strategic, integrated, safe and secure joint zoonotic research agenda and sustained capacity for imple-mentation of OH initiatives in Nigeria**	**4. Mapping of animal reservoirs of priority zoonotic pathogens in Nigeria.**	**2. Serological testing of animal species for zoonotic diseases in Nigeria.**	**1. Identify laboratories to be used for testing** **2. Collate avail-able data on available ani-mal reservoirs in Nigeria**	**Conduct seroprevalence of priority zoo-notic disease in Nigeria**	**· Publica-tions of findings in scientific journals.**			**X**	**X**	**X**	
		3. Develop research proposals exploring animal-hu-man-en-vironment interphases for priority zoonotic diseases in Nigeria e.g Brucellosis, Anthrax		**To identify ecological nicheof animal reservoirs for different pri-ority zoonotic disease**	**· Presen-tation in scientific confer-ences.**			**X**	**X**	**X**	

STRATEGIC GOAL	STRATEGIC OBJECTIVES	STRATEGY	ACTIVITIES	SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
GOAL 3: Increased awareness on One Health for all stakeholders	1. Improve public perception and awareness in zoonotic diseases and the One Health approach	Utilisation of the communication plan	Identify a communication focal person	Write a TOR	A communication focal person identified	TOR and letter of appointment		x			NCDC (Secretariat of OHTWG))
				Publish online				x			
				Recruit				x			
				Appointment				x			
			Write and disseminate press releases on One Health	Identify thematic areas	Number of press releases	Number of approved press releases			x		NCDC (Secretariat of OHTWG))
					Number of locations where releases have been made	Number of media houses that aired the messages			x		
				Develop content	Transcript of press releases			x			
				Obtain approval and release					x		
				Identify and invite media				x			
			Design, Develop, test, produce and distribute IEC materials in English, local languages, Pidgin English and on One Health	Identify target audience	Number of IEC materials in English and Local languages distributed	Copies of IEC materials available in English and local languages				x	NCDC (Secretariat of OHTWG))
				Develop technical content						x	
				Identify language experts						x	
				Translate content into other languages						x	
				Identify channels for dissemination						x	
				Testing of IEC materials						x	
			Develop and disseminate standardised messages on One Health via multimedia platforms e.g. *Facebook, Whatsapp* etc.	Identify thematic areas	Copies of standard messages developed	Number of standard messages disseminated				x	NCDC (Secretariat of OHTWG))
				Develop technical content						x	
				Identify language experts						x	
				Translate content into other languages						x	
				Identify channels for dissemination						x	
				Testing of IEC materials						x	

STRATEGIC GOAL	STRATEGIC OBJECTIVES	STRATEGY	ACTIVITIES	SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
GOAL 3: Increased awareness on One Health for all stakeholders	1. Improve public perception and awareness in zoonotic diseases and the One Health approach	Utilisation of the communication plan	Engage policy makers, legislators, traditional leaders, community members in dialogue on One Health	Identify relevant stakeholders	Number of meetings held with policy makes, legislators etc	Minutes and attendance list				x	NCDC (Secretariat of OHTWG))
				Advocacy to stakeholders					x		
				Share information One Health/ IEC					x		
				Identify and discuss community involvement and need for community mobilisers	Number of community Mobilised				x		
			Engagement of professional bodies/organisations in disseminating information on One Health e.g. CSOs, faith-based groups	Identify relevant stakeholders	Number of bodies engaged/ associations/ organisations	Minutes of engagement meeting with associations, bodies, organisations			x		
				Advocacy to stakeholders					x		
				Share information One Health and IEC					x		
				Identify and discuss organisational roles in One Health					x		
	2. Build capacity for sustainable communication activity at all tiers of government and among other stakeholders	Integrate OH communication activities at all levels of government	Identify health related programmes on media platforms for use in information dissemination		Number of health-related programmes identified	Relevant audio and visual materials			x		NCDC (Secretariat of OHTWG))
			Build capacity of media personnel for One Health reporting	Identify the participants and key media personnel	Number of media personnel trained and sensitised	Training reports, list of participants, pictures			x		
				Conduct a capacity needs assessment						x	
				Conduct 2-day training of participants						x	
			Build capacity of technical officers for One Health communication packaging	Identify technical officers	Number of technical officers trained	Training reports, list of participants, pictures			x		
				Conduct a 3-day workshop					x		

STRATEGIC GOAL	STRATEGIC OBJECTIVES	STRATEGY	ACTIVITIES	SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
***GOAL 3*:** Increased awareness on One Health for all stakeholders	3. To develop and standardise a communication plan bring together a group of multi-sectorial technical/ communication experts to develop and standardise a One Health vocabulary and message plan within the first three months	Stakeholder engagement	Identify key stakeholders and experts to develop key OH messages		Number of stakeholders identified	List of stakeholders			x		NCDC (Secretariat of OHTWG))
			Conduct 5-day workshop to adapt One Health key messages		Workshop held for 5-day	Workshop report			x		
				Testing of the messages will be a sub-activity in the OP	Number of messages tested	Copy of tested message			x		
				Produce and disseminate printed copies of key messages for all stakeholders	Number of messages printed and disseminated			x			
						Report of message test, pictures and list of stakeholders who participated		x			
					Number of messages printed	Copies of printed messages available		x			

STRATEGIC GOAL	STRATEGIC OBJECTIVES	STRATEGY	ACTIVITIES	SUB-ACTIVITIES	MONITORING INDICATORS	VERIFICATION	Q1	Q2	Q3	Q4	RESPONSIBLE AUTHORITY
GOAL 4: Enhanced government and other stakeholders' commitment and support for OH platform	1. To design and implement (operationalise) a framework for coordinating Donor/ private sector contributions	Identify and create linkages among partners on OH resource	Develop a One Health Profile/ brochure that details successes and priority focus areas	Identify priority focus areas and successes	Brochure produced	Printed Copy of brochure		X			NCDC (Secretariat of OHTWG))
				Design a brochure				X			
				Identify communication/technical resource persons				X			
				Conduct a 3-day workshop to develop One Health brochure/ advocacy briefs				X			
			Conduct a stakeholder analysis to review and Identify available/potential donors and private sector organisations	Conduct a one-day meeting	Stakeholder analysis conducted	Number of private organisations, donors identified, analysis report	X				
			Conduct a mapping of animal, environmental and human health infrastructure, and resources	Identify target communities	Mapping conducted	Report of resource mapping				X	The three line ministries
				Advocacy visits to community gatekeepers	Advocacy reports	Advocacy reports				X	
				Participatory community needs assessment to map resources	Need assessment conducted	Community resources mapping				X	
	2. To increase stakeholder participation and ownership in management of resources for OH	Engage stakeholders and establish guidelines for OH resource management	Conduct quarterly meetings of stakeholders	Quarterly meetings conducted	Minutes of quarterly meetings			X			NCDC (Secretariat of OHTWG))
			Ensure monthly feedback on OH activities to all stakeholders	Number of monthly feedback conducted	Feedback report			X			
			Harmonise OH activities in workplans of governments and partner organisations	Workplans harmonised	Copies of harmonised workplans			X			
	3. Mobilise greater Government commitment in sustained annual budgetary provision for OH and increase donor funding to support One Health activities	Advocacy and lobbying for OH funding	Conduct advocacy for the creation of a government budget allocation for OH	Advocacy meetings conducted	Advocacy reports						The three line Ministries
			Conduct advocacy for increased donor funding to support One Health activities	Advocacy meetings conducted	Advocacy reports		X				
					report of message test, pictures and list of stakeholders who participated		X				

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NOTES

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