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**PROCEEDINGS OF THE FIRST WORKSHOP
ON FISH HEALTH MANAGEMENT**

**DEPARTMENT OF VETERINARY PUBLIC
HEALTH AND PREVENTIVE MEDICINE,
UNIVERSITY OF IBADAN, IBADAN NIGERIA**



**THEME:
SUSTAINABLE PRODUCTION OF
WHOLESOME FISH: KEY TO AQUACULTURE
TRANSFORMATION AGENDA**

July 1-3, 2014.

**Proceedings of First Workshop on Fish Health Management,
University of Ibadan, Ibadan**

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**ENGAGING INTER-GOVERNMENTAL ORGANIZATIONS (EIO):
CAPACITY BUILDING AND TRAINING OPPORTUNITIES FOR
FISHERIES AND AQUACULTURE AT THE FOOD AND AGRICULTURAL
ORGANIZATION OF THE UNITED NATIONS**

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Definitions

Sustainable Development is defined by the World Commission on Environment and Development's as Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

People concerned about sustainable development suggest that meeting the needs of the future depends on how well we balance social, economic, and environmental objectives—or needs—when making decisions today. Some of these needs are itemized around the puzzle diagram.

Sustainable consumption and production (SCP) On the other hand, is about "the use of services and related products, which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of further generations" (Oslo symposium, 1994).

Capacity building: Capacity building can be defined as the ability of communities to perform functions, solve problems and set and achieve objectives in a sustainable manner. Capacity building involves the training of community workers involved in areas such as water, agriculture, nutrition and health. Also, it involves the strengthening local government and the establishment of research and policymaking bodies. Capacity building also referred to as capacity development is a conceptual approach to development that focuses on understanding the obstacles that inhibit people, governments and organizations. It also refers to help that is provided to groups, usually societies in developing countries, often in the form of (but not limited to) international aid work.

Fisheries: Generally, a fishery is an entity engaged in raising or harvesting fish which is determined by some authority to be a fishery. According to the FAO, a fishery is typically defined in terms of the "people involved, species or type of fish, area of water or seabed, method

of fishing, class of boats, purpose of the activities or a combination of the foregoing features". The definition often includes a combination of fish and fishers in a region, the latter fishing for similar species with similar gear types. Fishery may involve the capture of wild fish or raising fish through fish farming or aquaculture. Directly or indirectly, the livelihood of more than 500 million people in developing countries depends on fisheries and aquaculture. Overfishing, including the taking of fish beyond sustainable levels, is reducing fish stocks and employment in many world regions.

Aquaculture: According to the FAO, aquaculture is understood to mean the farming of aquatic organisms including fish, molluscs, crustaceans and aquatic plants. Farming implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc. Farming also implies individual or corporate ownership of the stock being cultivated. It is also known as aquafarming and involves cultivating freshwater and saltwater populations under controlled conditions, and can be contrasted with commercial fishing, which is the harvesting of wild fish. Broadly speaking, finfish and shellfish fisheries can be conceptualized as akin to hunting and gathering while aquaculture is akin to agriculture.

Mariculture: refers to aquaculture practiced in marine environments and in underwater habitats.

The reported output from global aquaculture operations would supply one half of the fish and shellfish that is directly consumed by humans; however, there are issues about the reliability of the reported figures. Further, in current aquaculture practice, products from several pounds of wild fish are used to produce one pound of a piscivorous fish like salmon.

Particular kinds of aquaculture include fish farming, shrimp farming, oyster farming, algaculture (such as seaweed farming), and the cultivation of ornamental fish. Particular methods include aquaponics and integrated multi-trophic aquaculture, both of which integrate fish farming and plant farming.

Fish comprises about 20 per cent of the animal protein in the diets of over 3 billion people. The contribution of fish to dietary animal protein can reach 50 per cent in the world's poorest regions, and up to 90 per cent in small island developing states. As highlighted by the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), this important role of fisheries is threatened by changes to the environment associated with increased emissions of greenhouse gases, including higher water temperatures and increases in ocean acidification, changing marine fish distribution. Add to that stress from overfishing and land-based pollution dead zones from land-based pollution, all of which reduce fish abundance and species diversity.

Aquaculture, a one of the fastest growing animal-food producing endeavors, is affected by warming temperature,

displacing species, like fresh water mollusks. Fisheries play a crucial role in providing food security and opportunities to earn income, particularly in developing countries.

Food production systems, including fisheries that wisely use climate information can make better informed decisions at policy, institutional and community levels so as to improve the efficient use of limited resources and increase fisheries production by reducing impacts of climate risks and enhancing opportunities. The Global Framework for Climate Services (GFCS) — established by WMO and its partners FAO, WFP, World Bank, UNDP, WHO, UNESCO and other organizations — supports the development and sharing of information products based on climate predictions targeting the most climate-vulnerable sectors and populations and help to improve food security.

To promote awareness of the importance of climate information products and services for fisheries, both capture and aquaculture, WMO as the lead organization of the Global Framework for Climate Services (GFCS) has co-organized with the Food and Agriculture Organization of the U.N. (FAO) a lunch-time side event at the fifteenth meeting of the United Nations Informal Consultative Process on Oceans and the Law of the Sea (ICP) (New York, 27-30 May 2014), whose theme, proposed by Norway, is the role of seafood and global food security". ("Fisheries, food security and climate services" at the Fifteenth meeting of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea (ICP).

2.0 Engaging Intergovernmental Organizations (EIO)

This is a week-long intensive professional development program designed to help mid- and senior level government officials, industry leaders and academic leaders interact more effectively with Intergovernmental Organizations (IGO). Participants gain invaluable networking opportunities as they explore of the roles and responsibilities of the four key intergovernmental organizations involved with animal health, public health, agriculture and food security: World Organization for Animal Health (OIE), World Health Organization (WHO), World Trade Organization (WTO), Food and Agricultural Organization of the United Nations (FAO), and Codex Alimentarius.

Using directed experiential learning, participants gain familiarity with public policy-making at the international level and build skills for effective engagement at the international level. This started in 2008.

From 22 to 28, March 2014, 23 participants with different professional profiles from Africa, Asia, Europe and North America came together in the sixth edition of the study tour. On 28 March 2014, they were welcomed to FAO where they were given an overview of the structure and the objectives of FAO, of Food Safety and the Codex and were shown around the Crisis Management Center for Animal Health (CMC-AH) where FAO deals with emergency situations related to animal health. Discussions centered on the impact of international standards and policy on

food safety, animal health, trade and public health.

3.0 Partnership and collaborative opportunities at FAO

A common feature in all the four (4) IGOs visited during EIO 2014- OIE (Paris-24/03/14), WTO (Geneva-25/03/14 and 27/03/14), WHO (Geneva- 26/03/14) and FAO (Rome- 28/03/14) - is that many of their staff had interned at the various IGOs during their student days. The students met on internship aim same ambition to work later with the IGOs

Open opportunities are available at all the IGOs for:

- (a) student internship and staff sabbatical leave for between three (3) months and one (1) year, but at NO COST (No stipend or salary) to the IGOs.
- (b) National member nations are also expected to attach or deploy government officials to the IGOs to undergo on site capacity building on pertinent issues and return back to their countries (US and some developed nations utilize this opportunity effectually).
- (c) FAO for example has different categories of exchange opportunities on its website for volunteers, students, young graduates and Food Safety Rooster. Although such opportunities exist on websites, most internship are arranged informally through personal relationship with staff such as built through the EIO 2014.

4.0 Carrying capacity building among EIO's

The EIO mostly committed to Fisheries capacity building is FAO Fisheries and Aquaculture Department.

Capacity building is a cross cutting theme which is one of the major elements for sustainable development. The FAO Fisheries and Aquaculture Department undertakes capacity building activities for marine and inland fisheries as well as aquaculture. These include:

- (a) provision of training courses within Technical Cooperation Projects (TCPs),
- (b) preparation of training materials (e.g. simple methods in aquaculture series, disease diagnostic guides, surveillance methods, extension manuals, technical manuals, etc.),
- (c) awareness raising through training/workshops, financial and technical support to existing training programmes carried out by partner institutions and custom training courses on specific topics.

Capacity building uses methodologies to enable participants to work independently with fisheries management issues and participate actively in the formulation of management plans in the region where they work.

The FAO Fisheries and Aquaculture Department is working towards strengthening the capacity of men and women in fishing communities – particularly small-scale fisheries – in the promotion and use of sustainable, cost efficient and safe fishing operations and methods, their enhanced participation in fisheries and

coastal management and socio-economic development, disaster preparedness and training, extension and information dissemination. These are being done through the development of guidelines and extension materials and the promotion of participatory approaches through their demonstration and pilot testing together with stakeholders.

5.0 FAO activities

The activities of the FAO include:

- (a) Responsible and efficient small-scale fishing technologies
- (b) Cleaner and better managed harbours and fish landing sites
- (c) Use of socio-economic and demographic indicators in community-based and integrated coastal zone management
- (d) Microfinance and micro-enterprise development
- (e) Strengthening fisher organizations, cooperatives and self-help groups
- (f) Disaster preparedness; support to emergency assistance and rehabilitation
- (g) Training on selective fishing gear, bycatch reduction and sustainable fishing methods

Fisheries and aquaculture have the capacity – if supported and developed in a regulated and environmentally sensitive manner – to contribute significantly to improving the well-being of poor and disadvantaged communities in developing countries and to achievement of several of the Millennium Development Goals, especially those related to poverty reduction and food and nutrition

security, environmental protection and biodiversity.

As part of a long-term strategy, activities of the FAO Fisheries and Aquaculture Department are defined through its vision and mission statements which reads:

Vision: A world in which responsible and sustainable use of fisheries and aquaculture resources makes an appreciable contribution to human well-being, food security and poverty alleviation.

Mission: To strengthen global governance and the managerial and technical capacities of members and to lead consensus-building towards improved conservation and utilization of aquatic resources.

The Department aims to make a significant contribution to the attainment of the Millennium Development Goals and the targets set by the World Summit on Sustainable Development and the World Food Summit. © FAO 2010-2014.

6.0 Thematic partnership with academic and research communities

The FAO is undergoing a paradigm shift from dealing with National Governments to largely thematic partnership with academic and research communities, as it recently on 10/01/2014 signed a MOU with Mississippi State University to improve the capacity of developing countries in fish health and aquaculture.

MSU President Mark E. Keenum and FAO Deputy Director General Daniel Gustafson signed a memorandum of understanding that expands the 2010

Table 1. Role of different categories in aquaculture

Category	Role in aquaculture
Academia	FAO engages with academic and research organizations to ensure that knowledge and research are used to obtain concrete results on the ground. By partnering with academia, we are capitalizing on the synergy generated by common goals, specifically, the goal of achieving food security.
Civil society	FAO recognizes that CSOs play a critical role in the fight against hunger given their technical expertise, their proximity to and representation of the hungry and poor, and their increasing presence in the field.
Private sector	Effective engagement with the private sector can help the fight against hunger and malnutrition by enhancing FAO's work in agriculture, fishery, forestry, natural resource management, and the food value chain from farmer to consumer.
Cooperatives	FAO is the lead agency ensuring that agriculture cooperatives are recognized and remain in the international agenda. FAO encourages member governments to establish enabling environments conducive to improving small producers' livelihoods.

foundation for collaborations focusing most immediately on aquatic animal health, disease prevention and emergency diagnostics, and FAO recognition of MSU as a Center for Knowledge for Aquatic Health.

The MOU makes MSU a member of the Global Aquaculture Advancement Partnership and will engage MSU's existing facilities and expertise in aquatic animal disease diagnostics and management to expand the work of FAO's Emergency Prevention System (EMPRES). It is a component of FAO's Food Chain Crisis Management Framework to prevent food chain emergencies, and to promote effective containment and management of the most serious epidemic pests and diseases and

food safety threats through international cooperation.

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- <http://www.fao.org/employment/volunteering-with-fao/en/> -No remuneration
- <http://www.fao.org/fishery/about/jobs/en>
- <http://www.fao.org/fishery/topic/16014/en>
- <http://www.fao.org/fishery/topic/16033/en>
- <http://www.fao.org/tc/apo/en/> Associate Professional Officer Programme
- <http://www.fao.org/tc/apo/other-opportunities/sponsored-fellows/en/>
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events are caused by bacteria or rickettsia, reflecting a large number of drug-resistant microbes in our database. Results confirm that EID origins are significantly correlated with socio-economic, environmental and ecological factors, and provide a basis for identifying regions where new EIDs are most likely to originate (emerging disease 'hotspots'). They also reveal a substantial risk of wildlife zoonotic and vector-borne EIDs originating at lower latitudes where reporting effort is low. Global resources to counter disease emergence are poorly allocated, with the majority of the scientific and surveillance effort focused on countries from where the next important EID is least likely to originate. (Kate E Jones, Nikkita G Patel, Marc A Levy, Adam Storeygard, Deborah Balk, John L Gittleman, Peter Daszak: Global trends in emerging infectious diseases. PubMed: [18288193](#) Volume: 451, Issue: 7181, Publisher: Nature Publishing Group, Pages: 990-993)

Infectious diseases have for centuries ranked with wars and famine as major challenges to human progress and survival. They remain among the leading causes of death and disability worldwide. Against a constant background of established infections, epidemics of new and old infectious diseases periodically emerge, greatly magnifying the global burden of infections. Studies of these emerging infections reveal the evolutionary properties of pathogenic microorganisms and the dynamic relationships between microorganisms, their hosts and the environment.

David M Morens, Gregory K Folkers, Anthony S Fauci The challenge of emerging and re-emerging infectious diseases. Volume: 430, Issue: 6996, Publisher: Nature Publishing Group, Pages: 242-249 PubMed: [15241422](#)

Emerging Zoonoses (EZ)

The WHO/FAO/OIE joint consultation on emerging zoonotic diseases held in Geneva, 3-5 May 2004, defined **Emerging Zoonoses** as "*a zoonosis that is newly recognized or newly evolved, or that has occurred previously but shows an increase in incidence or expansion in geographical, host or vector range* (<http://www.who.int/entity/zoonoses/en>). Emerging zoonotic diseases have potentially serious human health and economic impacts and their current upwards trends are likely to continue. Examples are Avian influenza, Bovine Spongiform Encephalitis ((BSE) - the Mad Cow disease- ,Marburg hemorrhagic fever, Ebola virus disease, West Nile virus, Rift Valley Fever and the Nipah virus.

Re-emerging "lingering" Zoonoses

Some of the "**lingering**" Zoonoses are **re-emerging** in some regions, although they seem to attract less public awareness. Examples of the lingering Zoonoses are Brucellosis, Bovine tuberculosis (which predisposes to HIV/AIDS), Leptospirosis (in dog-which has recorded increased incidence), Hantavirus (mice), salmonella (chicken), E. coli (cattle), Newcastle disease (wild and domesticated birds), toxoplasmosis (cats), giardiasis (beaver fever), trichinosis (swine), neuro-cysticercosis (swine), echinococcosis/ hydatidosis and rabies (dogs/bats)

(http://www.who.int/zoonoses/emerging_zoonoses/en/)

Beyond Zoonoses

One Health is not just about zoonotic diseases and emerging infectious diseases at the animal-human-ecosystem interface, but also includes international trade, food safety and security, livestock livelihood and poverty reduction issues which impact negatively on people's well-being, safety and livelihoods. The FAO's position is that the One Health approach calls for strong multisectoral and multidisciplinary collaboration, which moves beyond the strengthening of veterinary-public health systems to more clearly encompass disease prevention, with greater emphasis on safer food production, distribution and marketing practices, and adoption of sustainable animal agriculture and natural resource management. (<http://www.fao.org/docrep/012/ak731e/ak731e00.pdf>).

The main goal of FAO strategy is to establish a robust, global animal health system that effectively manages major health risks that arise from and affect animals, paying particular attention to the animal-human-ecosystem interface, using the emerging *One Health* approach, and placing disease dynamics into the broader context of sustainable agriculture, socio-economic development, environment protection and sustainability, whilst recognizing that adequate nutrition is essential for health. www.fao.org/docrep/meeting/021/ma145e.pdf.

Neglected Tropical Diseases

Neglected tropical diseases (NTDs) are a diverse group of communicable diseases that prevail in tropical and subtropical conditions in 149 countries and affect more than one billion people, costing developing economies billions of dollars every year. They mainly affect populations living in poverty, without adequate sanitation and in close contact with infectious vectors and domestic animals and livestock. http://www.who.int/neglected_diseases/diseases/en/

Nigeria has a 142 page MASTER PLAN FOR NEGLECTED TROPICAL DISEASES (NTDs) for 2013-2017 and the Federal Ministry of Health has established structures to control, eliminate and eradicate these neglected diseases in an integrated, cost-effective manner in collaboration with development partners and in line with relevant WHO Resolutions and Declaration. However, the Master Plan completely eliminates consideration of the role and application of the One Health intervention in effectively handling the challenge of NTD.

A case has been made for a Multidisciplinary Approach for the Control of Zoonoses in Nigeria (J. Vet. Adv., 2012, 2(12):557-567) and the control of neglected Zoonoses through animal intervention (Ehizibolo1*, D.O., Ehizibolo2, P.O., Ehizibolo3, E.E., Sugun1, M.Y. and Idachaba1, S.E). Due to the fact that these Zoonoses poses a potential hazard to both animal and public health, surveillance programs in humans and animals should be considered a priority especially in high risk areas.

The economic implications of the endemic neglected Zoonoses on human health and animal production in Nigeria need to be fully assessed. There is also need for stronger collaboration between the veterinary and medical professionals in Nigeria for effective disease control particularly in rural communities for the wellbeing of man. The government at all levels should be greatly concerned and support disease control measures by adequately funding the relevant agencies

Management of the diseases

There is a website of the Strategic Network on Neglected Diseases and Zoonoses (SNNDZ) <http://www.snndz.net/> which The SNNDZ aims to stimulate and support south-south (and triangular) exchange on research related to neglected infectious diseases and zoonosis.

Likewise is an Integrated Control of Neglected Zoonosis in Africa ICONZ project < <http://www.iconzafrica.org/>>, which This project aims at Improving Human Health and Animal Production in developing countries through Integrated Control of Neglected Zoonoses in animals, based on Scientific Innovation and Public Engagement.

ICONZ aims to tackle eight neglected Zoonoses – Anthrax, Bovine Tuberculosis, Brucellosis, Cysticercosis, Echinococcosis, Leishmaniasis, Rabies and Human African Trypanosomiasis.

But what makes ICONZ unique is its interdisciplinary structure – involving vets, medical doctors, basic scientists, epidemiologists and social scientists (to name but a few). This expertise is gathered from 21 partner institutions located across Africa and Europe.

ONE HEALTH MANAGEMENT OF HEALTH CHALLENGES: A CASE STUDY

'One Health for the Real World' Symposium titled 'Zoonoses, Ecosystems and Wellbeing' took place at the Zoological Society of London (ZSL) 17-18 Mar 2016. Organized by Zoological Society of London ZSL and Dynamic Drivers of Disease in Africa Consortium (DDDAC) 2012-2015.

Posted on 7 Apr 2016 by **Annie Cook**, post-doctoral scientist, ILRI

ONE HEALTH MANAGEMENT PRINCIPLES

The 'real world' = to share research results not only with each other but also with the policymakers and practitioners who could make a real difference in advancing the One Health agenda. '*Politics is key to moving forward on difficult One Health issues*' (Melissa Leach 2016)

- Recognize that biologic shifts in a pathogen, changes in the interactions between humans and our environment, fragile health systems, international indifference, high population mobility, customs and culture, urbanization, and a lack of trust in authorities — (can change) limited outbreak to epidemic "outbreak control" efforts are no longer sufficient for an epidemic control

- required is large-scale, coordinated humanitarian, social, public health, and medical response, combining classic public health measures with safe and effective interventions including behavioral changes, therapies, and when possible, vaccination.

- appreciation of the culture of the societies in the affected countries and deployment of interventions with the population's consent. Development of interventions in collaboration with the affected communities and rebuilding of trust are essential to their success- **Participatory Approach.**

- integrated efforts will need to be accompanied by much better coordination and real-time, open sharing of information across diverse disciplines and with all the players involved, from civil society, national governments, nongovernmental organizations, and academic institutions to regional and international organizations and, when appropriate, the military. (Jeremy Farrar and Peter Piot, 2014)

The relationship between One Health and poverty

'Human sickness is a major cause of falling into and remaining in poverty and much of this is related to agriculture'. 'Hurried responses to Zoonoses are often anti-poor, causing more harm'. misdiagnosis and underreporting were two big challenges in tackling emerging infectious diseases. And she underlined how effective control can be: 'Every dollar invested in brucellosis control returns six dollars in reduced burden'. (Delia Grace)

Should One Health research focus on emerging or endemic diseases?

false dichotomy exists between neglected tropical diseases and emerging diseases: 'Emerging diseases become endemic diseases' (Peter Daszak, 2016).

Endemic Zoonoses and emerging Zoonoses often have similar drivers. 'Effective health systems for neglected endemic Zoonoses will also help control emerging diseases.' (Sarah Cleaveland 2016)

5 The need to incorporate different perspectives into One Health research

Bassirou Bonfoh, director general of the Centre Suisse de Recherche Scientifiques in Côte d'Ivoire, stressed the need to incorporate 'different viewpoints, knowledge and expertise' when designing health systems.

Robin Wiess, of the University College London, reminded us that zoonosis is a two-way street: Humans can be a source of infectious disease in animals. 'Don't forget "anthroponoses!"

The closing statement *Melissa Leach* stressed that One Health is not always comfortable integration. 'As a social scientist I see that One Health is about solving puzzles, dispelling bullshit, learning new things and making the future different'. And there was a final plea from *Jan Scoones*, of the STEPS Centre and the Future Agricultures Consortium: 'Let's not make a new One Health discipline—yet another silo!

PRACTICAL ONE HEALTH ACTIONS NEEDED IN NIGERIA

1. ONE HEALTH CAPACITY BUILDING SUMMIT for relevant stakeholders like

- Federal, State and Local Government Ministries and Agencies;
- Agricultural, Biomedical health, Ecological/ Environmental, Medical and Veterinary Health Professionals and students;
- Academic and Research Institutions;
- Economists, Sociologists and Politicians
- Agricultural (animal and plants), environmental, medical and veterinary industries;
- Local community-based partners through Farmers Field Schools and One Health Clubs
- Community and non-traditional partners (i.e., civil defense, residents associations, public sanitation, companies, media)

Goal: Development of a Participatory One Health Nigeria Policy

2. EXPERT SURVEILLANCE TRAINING WORKSHOPS on Joint FAO–OIE–WHO Global Early Warning System for health threats and emerging risks for Building Local, State, National & International Early Warning System in animal, environmental, plant and human pathogens and diseases

Goal: Achieving an integrated EMPRES-GLEWS-IHR Integrated Disease Surveillance and Response (IDSR) Integrated Disease Surveillance and Response (IDSR) Integrated Disease Surveillance and Response (IDSR) Surveillance System

3. SOCIAL MOBILIZATION EDUCATION for agro-veterinary occupations, community animal and human health workers and networks, civic and religious groups, livestock livelihood and others workers in a coordinated way for dialogue with planned One Health messages., <http://www.who.int/features/2014/social-mobilisation/en/>;

Goal: Advocacy and Sustainability

4. NATIONAL ONE HEALTH POLICY

Articulate the subject area of One Health more clearly and present it to policy-makers and donors as part of the process of engaging government, potential donors and sponsors.

Goal: Define the overall importance of One Health and create a strategy investment document, or socio-economic framework.

CONCLUSION:

Worldwide, the veterinary profession has promoted the concept of One Health to address such issues as food safety, food security, antimicrobial resistance, climate change and the human-animal bond.

One Health provides the veterinary profession with the opportunity to rise to the challenges of the 21st century that the Manhattan principles outline.

If One Health is to survive and historians are going to reflect positively on the veterinary role in One Health, it is axiomatic that the veterinary profession of today, and into the future, must be well trained in the precepts of One Health, be a strong advocate of multidisciplinary approaches to solving the complex challenges of One Health, and provide decisive leadership.

The sustained response of the veterinary profession in meeting the precepts and being a champion of One Health is a litmus test for the future of the profession (Gibbs and Gibbs 2013).

DEDICATION

Dedicated to the Memory of the following late One Health pioneers in Nigeria:

Prof. G. O. Esuruoso, pioneer Head of the Department of Veterinary Public Health and Preventive Medicine, also known as the Father of Veterinary Public Health in Nigeria; who passed away on 26th January 2013 aged 80

Prof James Steele, the well-known American "Mr. Veterinary Public Health", who passed away November 10, 2013, aged 100 years old."

Prof Montefiore, a British Professor of Microbiology, College of Medicine/University College Hospital, UI, passed away on June 10 2014, aged 85;

ACKNOWLEDGEMENT/APPRECIATION

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THE VETERINARY COUNCIL OF NIGERIA CONTINUOUS EDUCATION COMMITTEE FOR
INVITING ME AS RESOURCE PERSON TO PRESENT THIS 2016 TOPIC
END OF PRESENTATION APPRECIATION TO THE AUDIENCE

THANK YOU ALL FOR GIVING ME AUDIENCE

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