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5TH AFRICA ANIMAL WELFARE CONFERENCE -ACTION 21

**Theme: One Health, One Welfare - *For a Better
and Greener Tomorrow***



Programme

November 1 - 3, 2021

**Accra International Conference
Centre (AICC), Accra, Ghana**

PROGRAMME

NOTE: Time is indicated as Ghana Standard Time
(GMT/UTC + 0)



DAY 1: MONDAY NOVEMBER 1, 2021

OPENING SESSION

Conference Moderators:

David Nyoagbe
Josiah Ojwang

8.30-10.20 a.m.

Arrival and Registration of Delegates;
Tea/Coffee

10.20-10.30 a.m.

Preliminaries – Moderators

10.30 -10.40 a.m.

Conference Overview and Objectives:
Kahindi Lekalhaile, Director of Research
and Planning, ANAW

10.40 -11.00 a.m.

Theme Exposition:

Wachira Kariuki, Director of Policy and
Public Affairs, Africa Network for Animal
Welfare

11.00 -11.15 a.m.

International Standards on Animal Welfare,

Dr Moetapele Letshwenyo, OIE Rep-
resentative, Southern Africa Region,
Botswana

Welcome Remarks:

11.15-11.35 a.m.

Prof. James Nkansah-Obrempong',
Chair,

Board of Directors, Africa Network for Animal Welfare (ANAW)

Dr Nick Nwankpa

Acting Director, African Union Inter-African Bureau for Animal Resources (AU-IBAR)

Alexander Juras

Chief-Civil Society Unit, United Nations Environment Programme (UNEP)

Goodwill Messages:

11.35 a.m-12.00 pm.

Wolf Gordon Clifton

Executive Director, Animal People

Tennyson Williams

Regional Director – Africa, World Animal Protection

Marianne Steele

12.00-12.15 p.m.

H.E. Amb.Damptey Bediako Asare

High Commissioner of Ghana to Kenya

Special Address:

12.15-12.50 pm

Keynote Address and Official Opening:

Hon. Dr Kwaku Afriyie

Minister for Environment, Science, Technology and Innovation, Republic of Ghana

12.50-1.00 pm

Group Photo

1.00-2.00 pm

Lunch

One Health, One Welfare as a Solution to Pandemics and Other Public Health Issues.

2.00- 2.15 pm

Animal Agriculture and their link to Global Pandemics,
Pavitra Krishnan, India

2.15-2.30 pm

Assessing the Feasibility and Practicability of Applying the 'Welfare Quality Assessment Protocol for Dairy Cows Among Dairy Farms in Kiruhura District, Uganda,
Dr Paul Ssuna, Makerere University, Uganda.

2.30-2.45 pm

Animal Welfare and Pandemic Risk Mitigation-the role of One Welfare
Dr Mark Jones, Head of Policy, Born Free Foundation, UK

2.45-3.00 pm

Prevalence of Welfare Associated Lesions and Practices and the association with Pork quality, Nairobi, Kenya,
Dr Sentamu Derrick Noah, International Livestock Research Institute (ILRI), Nairobi, Kenya

3.00-3.30 pm

Q & A Session

3.30-4.00 pm

Tea/Coffee Break

SESSION 1:

Session Chair:
Philip Lymbery

Global Chief Executive,
Compassion in World Farming
International

The Interplay between Wildlife and Livestock Trade and the One Health, One Welfare Approach

4.00 -4.15 pm

Wildlife and Livestock Trade and One Health,

Prof. Raphael Folitse, School of Veterinary Medicine,
Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

4.15-4.30 pm

The Role of the Aviation Industry in International Trade in Wildlife,

Dr Patrick Muinde, Research Manager, World Animal Protection, Kenya

4.30 -4.45 pm

Wildlife Trade, Livestock Trade and the Impact on One Health,

Dr Meyir Ziekah, Wildlife Veterinarian, Kumasi Zoo Manager, Wildlife Division of the Forestry Commission, Ghana

4.45-5.00 pm

Q and A

*******END OF DAY ONE*******

SESSION 2:

Session Chair:

Prof. James Wabacha,
AU-IBAR

United Nations Environment Programme (UNEP)

9.00-9.15 a.m.

Introduction to UNEA 5

Alexander Juras, Chief, Civil Society Unit, UNEP

10.20-10.30 a.m.

Q and A

9.30-9.45 a.m.

MGS engagement in UNEA 5,

Isaiah Otieno, Civil Society Unit, UNEP

9.45-10.00 a.m.

Q and A

10.00-10.30 am

Tea/Coffee Break

10.30 -11.00 a.m.

Status of MGS preparations towards UNEA 5- outcomes of the International Consultation, outcome of the work of thematic clusters etc,

Djatougbe Aziaka/Ayman Bel Hassan Cherkaoui

11.00-11.30 am

Q and A

11.30-11.50 a. m

Animal welfare resolution at UNEA 5.2 -current status and actions required,

Josphat Ngonyo, Executive Director, ANAW

11.50 a.m.-12.00 pm

Q and A

12.00-12.20 pm

UNEP @ 50,

Alexander Juras, Chief, Civil Society Unit, UNEP

12.20-12.30 p.m.

Q and A

12.30-12.50 p.m.

Stockholm + 50,

Laetitia Zobel, Civil Society Unit, UNEP

12.50-1.00 p. m

Q and A

1.00-2.00 pm

Lunch

SESSION 3:

Session Chair:

Isaiah Otieno

Civil Society Unit, UNEP

Improving animal welfare to ensure food security and safety

2.00 – 3.00 pm

Introduction

Fiona Miles

Country Director, FOUR PAWS South Africa

Daniela Battaglia,

Livestock Production Officer, Animal Production and Health Division, Food and Agriculture Organization of the United Nations (FAO)

SESSION 4:

Convened by: Food and Agriculture Organization of the United Nations (FAO) and FOUR PAWS

**Session Chair:
Daniela Battaglia**

Keynote:

Xavier Manteca

Professor of animal behaviour and animal welfare, School of Veterinary Science in Barcelona.

Case study:

Rebecca Doyle

Animal Welfare Scientist, International Livestock Research Institute

Panel discussion

Wachira Kariuki,

Policy and Public Affairs Director, Africa Network for Animal Welfare

Matthew Watkins

Senior Manager- Food Reform for Sustainability & Health (FReSH), World Business Council for Sustainable Development

Prof. James Wabacha

African Union InterAfrican Bureau for Animal Resources

Environmental Health, Climate Change and Human-Animal Welfare: The Interlink?

3.00-3.15 pm

The Detrimental Effects of Climate
Change on Animal Welfare and Various
Mitigation Strategies

Dr Kwaku Adomako, Department of An-
imal Science, Kwame Nkrumah Universi-
ty of Science and Technology, Kumasi,
Ghana

3.15-3.30 pm

Philip Lymbery

Global Chief Executive,
Compassion in World Farming
International

3.30-3.45 pm

Environmental Health, Climate Change
and Animal Welfare

Dr Kebba Daffeh, The Gambia

3.45-4.00 pm

The trade in donkeys and their skins: a
risk to global health

Dr Linda Evans

The Donkey Sanctuary

4.00-4.30 pm

Tea/Coffee Break

SESSION 5:

Session Chair:

Dr Nick Nkwampa
Director, AU-IBAR

Social Behavior Change

4.30-5.20 pm

Panel Discussion:

Changing Social Norms and Individual Behaviors: Cultivating Regenerative Virtues through Education and NGO Outreach

Panelists:

Prof. Janet L. Rumfelt, Ph.D.,

Professor and Chair, Liberal Arts Department, Regis University

Dr Katherine Baxter, Ph.D.,

Operations Manager, ANAW-USA

David Gies

M.A., Chief Financial Officer, ANAW-USA

Prof. M.D. Kinoti, Ph.D.,

Professor of Development Practice, Management and Leadership, Regis University

5.20-5.40 pm:

Social Behaviour Change During Covid-19; with relation to human and wildlife interactions,

Arno de Klerk and Douglass Wolhuter,
NSPCA, South Africa

*******END OF DAY TWO*******

SESSION 6:
Session Chair:
Prof. Janet Rumfelt
Regis University

Trends in Education, Training, Research and Innovation

SESSION 7:

Session Chair:

Prof. James

Herbert-Williams

Arizona State University

8.30-8.45 am

Trends of Training and Research in One Health, **Prof. Benjamin Emikpe**, School of Veterinary Medicine, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

8.45-9.00 am

Animal Welfare Training at Livestock Training Agencies (LITA) colleges in Tanzania. Experiences and Successes.

Jackson Tembo, Animals' Angels Ambassador, Tanzania and Sophie Greger, Head of International Project Development, Animals' Angels, Germany.

9.00-9.15 am

Exploring the Impact of Covid-19 on the Working Equid Community Across Southern Africa, **Penny Ward**, Regional Coordinator, World Horse Welfare, South Africa: and Paseka Kompi, National University of Lesotho

9.15 -9.30 am

How do we ensure the welfare of bats in research in Ghana?

Dr Richard Suu-rie, University of Ghana.

9.30-9.45 am

Myths and realities of animal use and alternatives in education and training: from skills acquisition to sustainable development,

Nick Jukes, Coordinator, InterNICHE, UK

9.45-10.00 am

Q and A

10.00-10.30 a.m.

Tea/Coffee Break

Animal Welfare and Sustainable Development

10.30-10.45 am

Donkeys and Sustainable Development in Ghana: The Impact of Donkey Slaughter and Trade in Donkey Skins

Dr Anthony Nsoh Akunzule, Executive Director, Ghana Poultry Network

10.45-11.00 am

Effects of Housing Type, Arrival Time and Feeding Management on Broiler Growth, Welfare and Meat Quality

Dr Jacob Alhassan Hamidu, Department of Animal Science, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

11.00-11-15 am

West Africa's Approach to One Welfare,
Dr Mactar Seck, Brooke West Africa, Dakar, Senegal.

11.15-11.30 am

Animal Welfare; A Panacea to Sustainable Livestock Production",

Prof. Balarabe Magaji Jahun - Director, Veterinary Teaching Hospital, Ahmadu Bello University, Zaria, Nigeria

11.30-11.45 am

Good Animal Welfare as the Cornerstone of Sustainable Development: South African Experiences

Morgan James and **Nazareth Appalsamy**, NSPCA, South Africa

SESSION 8:

Session Chair:
Dr Annie Lewa
AU-IBAR

Animal and Environmental Law, Advocacy and Campaigns

11.45 am-12.00 pm

Farmed animal protection and the law: how to address the question of food security, animal welfare, environmental and human health in an integrated way Considering One Welfare and, in an Afro-centric context **Tony Gerrans**, Executive Director, Humane Society International Africa, (representing CALS)

12.00-12.15 pm

The Theory and Practice of Institutional and Policy Advocacy for Equine Welfare, **Dr Raphael Kinoti**, Regional Director, Brooke East Africa and **Samuel Theuri**, Advocacy and Innovations Advisor, Brooke East Africa

12.15-12.30 pm

Corporate Campaigns, **Jennie Hunter**, The Humane League

12.30-12.45 pm

Animal Welfare Legislation in Africa: A Case Study of Nigeria **Hon.Garba Datti**, Member of the House of Representatives, Nigeria.

12.45-1.00 pm

Q & A

1.00 -2.00 pm

Lunch

SESSION 9:

Session Chair:

Dr Indraph Ragwa
CEO, Kenya Veterinary
Board

Conclusion and Way Forward

SESSION 10:

Moderators:
David Nyoagbe
Josiah Ojwang

2.00-2.30 pm

Update on the implementation of Animal Welfare Strategy for Africa (AWSA),
Dr Hiver Boussini, AU-IBAR

2.30-2.50 pm

Conference Resolutions:
Dr Dennis Bahati, Programme Manager, ANAW and **Dr Mwenda Mbaka**, Animal Welfare Expert

2.50-3.00 pm

Vote of Thanks:
Josphat Ngonyo, Executive Director, ANAW

3.00-3.15 pm

Concluding Remarks:
Dr Patrick Abake, Director of Veterinary Services, Ministry of Food and Agriculture, Republic of Ghana

3.15-3.45 pm

Closing Ceremony:
Presided over by **Hon.Dr Owusu Afriyie Akoto**

*****END OF CONFERENCE*****

ABSTRACT



Wildlife And Livestock Trade, And One Health

Presentation by Prof. Raphael D. Folitse

School of Veterinary Medicine, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi.

Wildlife trade involves selling wild animals for meat or as pets. Livestock trade involves selling farm animals for meat and breeding.

Trade in wildlife and livestock contributes to better lives of people in many ways, including combating hunger and malnutrition, generating incomes and employment. Live animal markets are essential source of affordable, fresh and nutritious food for many people. In many live animal markets, farmers can sell directly to consumers and earn some income. However, unregulated trade in wildlife and livestock, can threaten the health of people, animals and the environment.

Wildlife and livestock markets create environment for increased animal-animal contacts and human-animal contacts leading to higher risk of pathogen spillovers from animals to humans, thus significantly contributing to disease emergence and transmission.

Many recent zoonotic disease outbreaks with severe health and socio-economic consequences are linked to wildlife trade. Examples are COVID-19, Ebola, Lassa, and Marburg Fever.

To prevent the next pandemic, we, collectively must focus attention on live animal trade, particularly wildlife trade. Countries should develop and implement a comprehensive "One Health" strategy, involving Animal Health, Human Health and Environmental Health subsectors to regulate live animal trade, keep the environment safe, provide surveillance data on pathogens detected at wildlife and livestock markets and at points of entry to countries; provide guidelines on prompt detection, accurate diagnosis and appropriate interventions; address animal welfare concerns.

Our collective and coordinated action based on "One Health" remains essential to ensuring a better and a safer live animal trade devoid of high risk disease pandemics originating from animals, and cruelty to animals.

Assessing the Feasibility of Applying the Welfare Quality Assessment Protocol for Dairy Cows on Farms in Kiruhura District, Uganda

Makerere University, Uganda

Welfare Quality® assessment protocols have been used extensively in Europe to assess welfare of livestock for research or policy objectives, however, their applicability among production systems in Uganda has not been examined. The aim of this research was to assess the feasibility of applying the welfare quality® assessment protocol (designed in the European Union) for dairy cows on extensive farms in Kiruhura District, Uganda. In this study, the protocol was tested on 24 dairy farms (herd sizes ranged from 15 to 125 cows) randomly selected from six (6) sub counties in Kiruhura district over two (2) visits. The first visit was early in the morning (6:30 am) during milking and another in the afternoon (2:00pm) during grazing. Each of the assessments lasted for about an hour. The visit in the morning included a questionnaire-guided interview to evaluate the care, management and health, and animal welfare attributes of the cows when they were still in the barn. The second visit in the afternoon assessed farm resources, stockman ship and environment in which the cows graze. Overall, 1,256 cows were assessed, and 24 farm managers interviewed. The assessment captured measures to be retained without modification, measures retained with slight modification and eliminating unsuitable measures. The study showed that not all measures are feasible for on-farm assessment among extensive dairy farms in Kiruhura, district, Uganda as only 40 measures were found practical. Therefore, adaptation of existing protocols and setting of acceptable and non-acceptable thresholds tailored to local production systems for each of the identified measures are necessary to enhance adoption of the existing protocol.

Key words: Feasibility, welfare quality assessment protocol, semi-intensive and extensive dairy production systems, Uganda

Trends of Training and Research in One Health: Necessary step for Emergency Preparedness and Response to Outbreaks in Africa

Emikpe B.O (DVM, PhD, FCVSN)

Professor of Diagnostic and Toxicological Pathology

Dean, School of Veterinary Medicine, KNUST

Combatting pandemics necessitate critical assessment of readiness in research, training and management of data to effectively anticipate, prevent and manage such pandemics. In Africa, more is desired on research and training in zoonoses using “One Health” approach that considers human, animal, and environmental drivers of zoonotic disease. This presentation is based on available online information on research and training in Africa with need for innovative approaches to such for enhanced diagnosis and prevention using One Health.

Information was sourced online using established search engine (Pubmed, Scopus and Google scholar) and information from various stakeholders in One Health organised workshops.

Results showed over 96 publications on Pubmed with most on viral, pig, bat or primates-related zoonoses with less emphasis on training needs and some emerging zoonoses: Arcobacter, Helicobacter spp, and those associated with fish and environmental bioaccumulation of heavy metal pollutants. It also revealed that One Health training had been driven by FELTP, a collaborative effort to fight zoonotic diseases in Africa. However, efforts should be to produce more specialists with the requisite competency in Diagnostics, Comparative medicine, Integrative Pathobiology and One Health.

This calls for training through appropriate Continued Education, Diploma and Postgraduate programmes. Fellowship programme in One Health leveraging on the existing medical and veterinary schools should be desired. This move will provide critical mass of experts ready to combat and contain pandemics even in areas where specialists are not available in other African countries. These plans are achievable with combined efforts on the respective government and development partners.

Animal Agriculture and Their Link to Global Pandemics

Pavitra Krishnan

Partnership Alliance- Global South

Livestock production over the past few decades has changed significantly, with industrial systems becoming more dominant in developed countries and becoming increasingly important in the developing parts of the world – reflecting a prominent shift from traditional animal agriculture. But with our appetite for dairy, eggs and meat comes the need be in ever-closer contact with both domesticated and wild animals. The industrial systems have further forced these animals into increasingly confined spaces and invaded ever more of their habitats. Fueled by our food choices, our environmentally destructive activities are bringing us closer to wild animals and their often, unknown pathogens, creating favorable conditions for viruses to spread, and ultimately enabling the development of global zoonotic pandemics. The SARS-CoV-2, more commonly known as the coronavirus, is one such pandemic which has hugely impacted our lives and changed the way we live – for perhaps forever. And while the massive loss of lives and livelihoods due to the pandemic needs to be acknowledged, it is also important to look into the root causes of the pandemic in order to minimize the risk of potentially far more damaging outbreaks in the future. With nearly 75% of emerging infectious diseases in humans being zoonoses, there is mounting evidence which suggest that the increase in zoonotic events is directly linked to the increasing interactions of humans with animals, particularly in terms of food sourcing, making it critical to highlight our current industrial animal agriculture model and the serious threat it poses to both individual and global health – and already causing more fatalities than diabetes and traffic accidents combined. Transforming the global food system into one that is just, healthy, and compassionate from a human, environmental and animal perspective provides a multi problem solution – preventing not only future pandemics but also helping mitigate major parallel crises such as climate change, world hunger, and antibiotics resistance.

Myths And Realities of Animal Use and Alternatives in Education and Training: From Skills Acquisition to Sustainable Development

Nick Jukes

InterNICHE, Leicester, UK

Innovative, humane methods for education and training in medicine, veterinary medicine and biology are sufficiently widespread to be considered the norm in many university departments across the world. Such methods include non-animal tools such as digital video, virtual laboratories, and training models and mannekins; others involve humane approaches such as student self-experimentation, clinical learning opportunities with human and animal patients, body donation programs, and ethical fieldwork. Such approaches are usually developed and implemented by teachers themselves, for their pedagogical, ethical and economic advantages. For those teachers who continue to use methods involving harmful animal use, such as animal experimentation and the dissection of purposely killed animals, there are frequently a number of common concerns expressed that relate to the efficacy and suitability of alternatives and to whether change from conventional methods is necessary. This presentation explores the degree to which such concerns can withstand scrutiny. Do they reflect myths and misunderstandings, or do they contain truths rooted in a commitment to knowledge and skills acquisition? How best to support potential enhancement of education and training and the meeting of sustainable development goals?

Good Animal Welfare as the Cornerstone to Sustainable Development: - A South African Perspective

Morgane James and Grace de Lange

**National Council of SPCAs, P.O.Box 1320 Alberton, 1450,
South Africa**

Animals are at the centre of human advancement, especially in developing areas where their use is linked to communities striving for better futures. Activities such as small-scale intensive farming of animals offers opportunities for food security and increased economic stability in small co-operatives. And working equine are used increasingly in some informal sectors, to transport building supplies for the construction of houses.

However, the sustainability of these activities is only possible if animal welfare is a core component, and the needs of the animals are met in accordance with best practice. This submission provides case studies which illustrate typical areas of failure to protect the welfare of the animals in these sectors and the resulting consequences. In addition, reference is given to applicable national legislation and standards and the legal implications of neglecting the welfare of these animals.

In conclusion, practical recommendations are given for the humane use and protection of animals in this development context, for the benefit of the animals and also the communities they serve.

KEY WORDS: Animal Welfare, Working Donkeys, Farm Animals, Sustainability, Legislation

HOW DO WE ENSURE THE WELFARE OF BATS IN RE-SEARCH IN GHANA

Authors: Suu-Ire¹ R D., Ziekah² M. Y, Cunningham³ A. A., James LN Wood⁴

1Suu-Ire RD School of Veterinary Medicine, University if Ghana

2ZiekahMY; Kumasi Zoological Gardens, Wildlife Division, Forestry Commission.

3Cunningham, AA: Institute of Zoology, Zoological Society of London, UK.

4Wood, JNL.: School of Veterinary Medicine, University of Cambridge, UK.

Bats play a vital role in the provision of ecosystem services including pollination, seed dispersal and arthropod control, among others. However, bats are known or suspected to be evolutionary hosts of several high consequence zoonotic pathogens, including filoviruses (Ebola and Marburg viruses), Hendra and Nipah viruses, and severe acute respiratory syndrome coronaviruses.

There is a pressing need, therefore, to understand the drivers of infection spillover from bats into other species in order to inform disease mitigation; hence, there is a need to understand the dynamics of infection within the specific reservoir hosts. There is therefore global interest in bats, both wild free ranging and in captive facilities, as a research species. Globally bats are captured using varying methods for sampling and other studies. Unfortunately, capture of bats for sampling purposes is mostly invasive, stressful and might compromise on the welfare of these animals.

Our bat research team, Bats and Bugs, has through many projects, since 2007, been involved in bat research. Our observation indicates a change in the methods of handling bats for research. We reviewed the handling of bats during field and captive research by our team in Ghana. We provide some insight into housing of captive bats and recommend ideal approaches in handling both captive and wild bats during research to ensure their welfare.

The Role of The Aviation Industry in The International Trade of Wildlife

Patrick Muinde¹, Angie Elwin², Edith Kabesiime¹, Nick Stewart² and Neil D'Cruze²

1World Animal Protection, Westside Towers - Suite. 901, Lower Kabete Road, off Brookside Roundabout, Nairobi, Kenya

2 World Animal Protection, 5th Floor, 222 Grays Inn Road, London WC1X 8HB, United Kingdom

Wild animals are commercially traded in staggering volumes to supply international consumer demand for exotic pets, fashion items, traditional medicine, and trophies. This global multibillion-dollar industry is being facilitated by the aviation industry.

Despite any short-term economic profits involved, and irrespective of legality, this type of international trade currently incurs negative impacts on the welfare of individual animals, and the conservation of wild populations. It also risks public health and economic security in the long-term. The potential for animal suffering exists at each stage of the trade chain, and the ineffective management and monitoring of trade, impairs current conservation efforts.

Most (<70%) zoonotic emerging infectious diseases (including COVID-19) are thought to originate from wild animals, and it is against this backdrop that WHO, OIE and UNEP issued interim guidance urging relevant authorities to end the sale of live wild animals in traditional food markets as an emergency measure to prevent future pandemics.

Mindful of the importance of the Sustainable Development Goals, we reason that an approach focusing collective efforts on a shift away from the commercial exploitation of wildlife, rather than improving the status quo, should be our more ambitious goal to protect people and planet. As transnational commercial transport expands, so do opportunities to ship wildlife. Consequently, we urge airlines to stop transporting wild animals for commercial purposes, and governments to provide political support for these efforts.

Key words: Animal Welfare, Aviation industry, Conservation, Wildlife trade, Zoonotic disease

Wildlife Trade, Livestock Trade And The Impact On One Health

Authors: Ziekah, Y. M1*, Tasiame, K.W2

1 Kumasi Zoological Gardens, p o box 3148, Wildlife Division, Forestry Commission, Ghana

2 KNUST

As millions of animals are moved internally and across borders, introduction of exotic diseases and the spread and maintenance of endemic ones affects local populations. International and local wildlife trade by exporters, hunters and consumers increases the chances of zoonotic disease risk. Wild animals themselves do not increase disease threat, but human activities such as capturing and hunting for bushmeat, encroachment into wildlife habitats, illegal mining and agricultural expansion are some of the pathways that do. For example, an outbreak of monkey pox in the United States in 2003 that affected animals and humans was as a result of the importation of rodents from Ghana.

One Health is a multi-sectoral approach to mitigate the risk of pathogens jumping from animals to humans. We collated data from the Wildlife Division and the Veterinary Services Department. Ghana exported 150,343 and imported 133,472 different wild animals comprising primates, reptiles, insects and some rodents from 2017 to 2019. Over 8,494 wild animals were traded in a bushmeat market we surveyed. Handling method was seen to create stress for these animals leading to disease incidences and deaths.

We conclude that the One Health concept needs to be enhanced in order to promote safe wildlife and livestock trade while respecting animal welfare practices to prevent animal suffering and the spillover of zoonotic pathogens to humans.

Animal Welfare and Pandemic Risk Mitigation - The Role of One Welfare

Dr Mark Jones, Head of Policy, Born Free Foundation

Dr Rebeca Garcia Pinillos, Founder and Director, One Welfare

Adeline Lerambert, International Policy Specialist, Born Free Foundation

The COVID-19 pandemic, which is widely believed to have its origins in wild animals, has resulted in considerable scientific and political debate over the health and welfare risks associated with wildlife interactions, particularly those where animal welfare is compromised, and how such risks might be effectively mitigated. The capture, breeding, holding, transportation, handling, sale, and close interaction with wild animals, particularly when large numbers of animals of different species are in proximity, results in stress. This, in turn, is likely to increase opportunities for pathogen amplification, transmission and mutation which may significantly increase the chances of pathogen spill over between species, and to humans.

The One Welfare framework describes the interconnection between animal welfare, human wellbeing, and their physical and social environment. Its adoption and implementation offer a holistic approach, and a tool to support animal and human pandemic risks mitigation, while also contributing to efforts aimed at addressing wellbeing and the biodiversity crisis.

This presentation will outline the One Welfare framework and recommend that those responsible for planning the recovery phase from COVID-19 and future zoonotic risk mitigation strategies should adopt and implement such an approach. As an example, we will highlight how reviewing the WHO prescriptions for a healthy, green recovery in the context of One Welfare can better support global efforts.

International Standards on Animal Welfare

Dr Moetapele Letshwenyo

OIE Representative, Southern Africa Region, Botswana

One of the key mandates of the OIE is animal welfare – animal health is a key component of animal welfare. The organization works with veterinary services to improve animal welfare in the spirit of “Protecting Animals, Preserving our Future”. The OIE defines animal welfare as “the physical and mental state of an animal in relation to the conditions in which it lives and dies”. The Guiding Principles on animal welfare refers to the universally recognised “Five Freedoms”, published in 1965, to describe the right to welfare of animals under human control. Welfare applies in an animal’s day to day life and may be perceived differently from one region or culture to another. It is therefore, a complex subject which involves scientific, ethical, cultural and religious considerations.

To engage strategically in this complex matter, the OIE developed a Global Animal Welfare Strategy . Its vision is “A world where the welfare of animals is respected, promoted and advanced, in ways that complement the pursuit of animal health, human well-being, socio-economic development and environmental sustainability”.

The strategy provides continuous guidance for the OIE’s activities in this area. It is based on four strategic pillars of: 1) Developing animal welfare standards, 2) Capacity building and education, 3) Implementation of animal welfare standards and policies and 4) Communication with governments, organizations, and the public. Pursuant to this, the OIE sets standards recognised by the World Trade Organization as references in animal welfare. The standards currently cover terrestrial animals and farmed fish in key sectors and are regularly updated according to new scientific knowledge. The OIE assists Member Countries by continuously building capacity on animal welfare.

Effects of Housing Type, Arrival Time and Feeding Management on Broiler Growth, Welfare and Meat Quality.

J. A. Hamidu, A. Simpah Anim Jnr., K. Adomako, M. T. Likilasua
Department of Animal Science, Faculty of Agriculture, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

The study investigates the effects of housing, feeding, and placement time of chicks on broiler performance and welfare. In a 2*2*2 factorial design, Cobb 500 broiler chicks (n=600) were divided between deep litter and slated floor houses. Additionally, half of the birds were placed at 10:00 am in pens and half at 1:30 pm. Again, half of all birds had feed withdrawn between 11:30 am to 4:30 pm or continued as ad-libitum. Each treatment was replicated three times. Birds were reared to seven (7) weeks and their growth and welfare monitored. At slaughter, two birds each from a treatment were sacrificed to measure carcass, organoleptic, hematological, and biochemical parameters.

Data were analyzed using the Proc. Mixed Procedure of SAS at $P < 0.05$. The final body weight, weight gain, feed intake, and FCR were higher in slated floor versus deep litter. There was no difference in these parameters between feeding regimes and placement time, and the interactions. The average water intake was higher in the slated versus deep litter housing. Broilers on ad-libitum and the afternoon placement treatments gained more weight than feed withdrawal and morning placement treatments. The two-way and the three-way interactions were not different in weight gain. Measurement of stress hormones, hematological indices and meat quality parameters showed good performance in the slated floor versus deep litter houses. The use of slated floor housing system resulted in higher performance than deep litter housing system while feeding system and placement time appeared not to have a bigger effect.

Keywords; Housing system, feed withdrawal, placement time, growth rate, blood analysis, meat quality.

Trends of Training and Research in One Health: Necessary step for Emergency Preparedness and Response to Outbreaks in Africa

Kwaku Adomako

Department of Animal Science,

**Kwame Nkrumah University of Science and Technology (KNUST),
Kumasi**

In Ghana, like many Sub-Saharan African countries, the effect of heat stress on farm animals is exacerbated by climate change. The effects of climate change could be calamitous on food security (<http://www.un.org/sustainabledevelopment/climate-change-2/>). In Ghana, efforts to mitigate the effects of climate change have been biased towards crop production. However, increasing ambient temperatures equally affect farm animal productivity. The local poultry breeds in Ghana are adaptable but are highly unproductive. Most small and large scale poultry farmers import exotic birds from Europe.

However, these imported strains produce significantly below their potential primarily due to heat stress, poor feed quality and increased susceptibility to diseases. Trends in climate change suggest that, its effects will likely worsen in the near future. Heat stress has been found to have various negative effects on liveability, production performance, immune functions, and disease susceptibility in poultry. Heat stress negatively affects high growth rate in birds by hindering dissipation of the excessive internally produced heat, leading to a lethal elevation in body temperature. The long term solution to negative effects of global warming on poultry production in Ghana is to develop climate-smart poultry strains that are adaptable to climate change and also utilize physiological and nutritional strategies.

A series of experiments have been conducted to combat the negative effects of climate change especially high ambient temperature. In conclusion, the detrimental effects of high ambient temperature as a result of climate change can be combated by the development of climate-smart chickens using naked neck and frizzle genes as well as the utilization of early age thermal conditioning and feed withdrawal/restriction.

Key words: Climate change, naked neck, frizzle, early age thermal conditioning, feed withdrawal/ restriction

Donkeys and Horses and Sustainable Development in Ghana: The Impact of Donkey Slaughter and Trade and Horse Welfare

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Co-Authors: Ulla Deventer ², Eva Lydeking ³

1 Ghana Poultry Network, Accra, Ghana

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Conference Sub-Themes: Animal Welfare and Sustainable Development
Northern Ghana has the largest concentration of donkeys and horses in the country. Donkeys for centuries play a key role in the farming systems, in Northern Ghana, as well as the other neighboring countries: Burkina Faso, Mali, Niger, Mauritania and Nigeria. Donkeys were used for draught power in the tillage of land for crop production, carrying of farm products, fuelwood, and water for household use and construction. These factors clearly showed that donkey plays integral parts of the livelihoods at the household level in the West African Sub-region. In this regard, the donkey is contributing to the achievements of the UN Sustainable Development Goals, particularly that of Goal 1 and 2. With modern transport systems, the use of donkeys in trade is confined to transport purposes in rural communities.

The elite section of the population in northern and southern Ghana, on the other hand commonly use horses, for important ceremonial purposes and recreational uses, especially during festive celebrations. Since 2015, with the start of the trade in donkey skins to China, the role of the donkey in community development is changing from being an animal for agricultural importance to that of trade-in –skin economic value. This shift in purpose necessitates the need to focus more on the welfare of this important animal for draught. Information gathered from these methods adopted showed that donkeys are used for trade- in -skin and meat with associated poor animal welfare conditions, other than the original purpose of being used as a draught animal. On the other hand, horses are increasingly used for recreational purposes in urban areas with inappropriate welfare conditions.

Key words: donkey, horse, UN sustainable development, livelihoods, animal welfare

Animal Welfare Training at Livestock Training Agencies (LITA) Colleges in Tanzania. Experiences and Successes

Tanzania has one of the largest farm animal populations on the African continent. Tanzania is also a country with a specific and complex legal framework regarding animal welfare, the Animal Welfare Act 2008 and its corresponding regulations.

Until the government signed the Animal Welfare Act, in many communities in Tanzania, most farm animal keepers paid little attention on animal welfare issues.

Tanzania has received support from many organizations to help improving animal protection. Animals' Angels has been contributing training packages for students and stakeholders regarding animal welfare at animal markets and during transport.

Inspired by Animals' Angels comprehensive education material, Mpwapwa College has founded a Students Animal Welfare Club in 2017. The main functions of the club are to raise awareness and empathy for farm animals and to strengthen the efforts of preventing animal cruelty. This is carried out by discussions in class and by visiting livestock markets, slaughter slabs, livestock check points, dipping and spraying points, by collaborating with the Livestock Department at the district council level in Mpwapwa and the police check points and carrying out outreach to livestock keepers. The club has 110 members.

The students are gaining a deep knowledge and understanding of the legal provisions regarding animal welfare and how to apply them in their coming career as livestock field officers. Animals' Angels education material has been presented to all eight LITA colleges in Tanzania. To date, 7 out of 8 colleges founded an animal welfare club.

Social Behavior Change During Covid-19 With Relation to Human and Wildlife Interactions

Prior to the advent of Covid-19, there were already wildlife practices which were seen as irresponsible, inhumane, and abhorrent such as poaching with the use of dogs and the captive lion industry. These practices have gained momentum on international and local platforms and existing perspectives are changing. Awareness programs, education and prosecutions have raised consciousness as to the plight we place in our wildlife.

Every aspect of human and animal lives has been dramatically and negatively affected by the rise of Covid-19 and its mutations. While wildlife welfare prior to Covid-19 had not been adequately addressed within wildlife management practices and conservation policy, the pandemic has exacerbated these limitations very present in an already failed system. The impact of the virus on income earners, business operations and ultimately, wildlife has seen a plethora of welfare concerns arise. The economic deterioration brought on by Covid-19 gave rise to financial limitations on programs that ensure optimal operational management that is conducive to the well-being of both humans and animals.

The socio-economic impacts the Covid-19 pandemic has brought about financial strain to many households. As such there has been an increase in the poaching of wildlife by means of hunting with dogs an increased market to cater for traditional medicine demand, gambling opportunities and subsistence hunting. Whilst we are cognizant of the realities faced globally, the NSPCA remains steadfast in its statutory mandate to promote animal welfare and prevent animal cruelty in South Africa.

Trends of Training and Research in One Health: Necessary step for Emergency Preparedness and Response to Outbreaks in Africa

Pig pre-slaughter treatment is known to affect pork quality, but there are no studies to date investigating this relationship in the Kenyan context. This study determined the prevalence of welfare lesions and detrimental welfare practices on pigs for slaughter, and to analyze the relationship between occurrence of these lesions and practices with meat quality at Ndumbuini slaughterhouse in Kenya. Data was obtained by observation of 529 slaughter pigs, meat samples were obtained to determine meat quality by measuring meat pH₂₄, color and Drip-loss. Pork was then classified into four quality categories: Red, Firm, Non-exudative (RFN); Pale, Soft Exudative (PSE); Dark Firm Dry (DFD); and Red Soft Exudative (RSE).

99.61% of the pigs were insufficiently stunned based on post-stunning consciousness signs, 82.97% had one or more welfare-associated lesions with the most prevalent being ear marks. 5.4% of pigs were transported to the slaughterhouse tied to motorbikes and bicycles, while 27.44% were transported under conditions of high loading density. 52.02% were kept for 24 hours or more before being presented for slaughter. 16.54% of the pork samples were classified as sub-optimal quality.

A multinomial logistic model revealed significant associations; between slaughtering pigs on the day of purchase and obtaining RSE pork (OR 3.66); and between transporting pigs at a high loading density and obtaining DFD pork (OR 14.0). These results indicate the need for educating pork value chain stakeholders concerning animal welfare. This study also shows that there is animal welfare policy and legislation but insufficient education and enforcement of the same.

Environmental Health, Climate Change and Animal Welfare

Dr Kebba Daffeh

The interrelationship between Animal Welfare, Climate Change and Environmental Health is complex and multidimensional. Whilst unsustainable livestock production practices such as large scale industrial production mostly characterized by poor state of animal welfare contribute to environmental issues, including global warming, land degradation, air and water pollution, and loss of biodiversity, on the other hand, it has been established that improving animal health and welfare reduces emission intensity and enhances resource use efficiency by reducing mortality, and improving productivity and fertility.

This article however focus on consequences of climate change on environmental health and animal welfare. The consequences of climate change include fragile ecosystems, loss of biodiversity and significant reduction in environmental sustainability. These are intrinsically linked to environmental health, human wellbeing and animal welfare within the framework of One Welfare. Climate change globally pose a major threat to the welfare of animals of all species particularly to the welfare of livestock in Sub Saharan Africa where low input traditional system predominates. The system is premise on dependency on natural resources which increases vulnerability. The major climatic threats to the welfare of livestock in sub Saharan Africa are droughts, flash floods, delay in onset and early cessation of rains, the uneven distribution of rainfall, increase frequency and intensity of heat waves and frequent bush fires among others.

These threats are inherently linked to the welfare of animals stemming from production constraints which include among others: inadequate availability of quality fodder and water during the dry season, frequent heat stress, high incidence of pest and disease, survival and distribution of pathogens and their vectors, poor rangeland management and low level of climate adaptation skills and knowledge of farmers and extension officers, obstruction of livestock mobility routes and inadequate access to veterinary services, supplies and new technologies. With their fragile ecosystems, poor infrastructure

and with the vast majority of livelihoods depending on the exploitation of natural resources, livestock production systems in Sub Saharan African countries certainly have to take the threat from climate change seriously and should earnestly look for urgent ways of adaptation or else face the consequence of increased animal suffering, high livestock morbidity and mortality, increased poverty and malnutrition, loss of lives and livelihoods from climate and environmental hazards, which are projected to increase. While confirming the validity of current coping strategies, there is the need to uncover new pertinent adaptation strategies for the future.

This could involve delivery of adaptation benefits to communities and strengthening result oriented capacities of national, regional and local institutions as well as improving animals' responsiveness to fluctuations and variations in climate through specific adaptation and survival strategies which are dependent on climate attributes. Rainfall variability, continued decline in per capita availability of land, further land degradation, social mutations and poverty effects make it increasingly necessary to seek out new and better solutions to climate hazards. Furthermore, main streaming of animal welfare into livestock production offers great potential to strengthen resilience of vulnerable populations to climate change

Trends of Training and Research in One Health: Necessary step for Emergency Preparedness and Response to Outbreaks in Africa

Jennie Hunter

Corporate Campaigns: I will discuss why corporate campaigns are an effective way to achieve welfare improvements on factory farms, go over the steps involved in implementing them, and share success stories.

Jennie Hunter

One Health, One Welfare: How Protecting People Means Protecting Animals Too

Philip Lymbery

Global Chief Executive

Compassion in World Farming International

The battle against the Coronavirus pandemic is without doubt the biggest global crisis in a lifetime. Could it be that the way we now produce so much of our food worldwide is already brewing up the next one? Whilst society has gone into battle with the virus, our invisible enemy, the truth is we've been locked in an almighty battle for some time now. At its heart lies factory farming.

Keeping animals caged, crammed and confined – the way most farmed animals are now reared – provides the ideal breeding ground for new and more deadly strains of virus. Swine flu and highly pathogenic Avian flu being but two examples. Whilst Covid-19 is believed to be born out of the ill-treatment of animals caught up in wet markets and the illegal wildlife trade, it shows strong parallels with these other viruses of factory farmed origin.

Both Swine flu and Avian Influenza – originating in pigs and chickens – have been devastating. The 2009 Swine flu pandemic went on to kill possibly half a million people worldwide. The next pandemic could well come from an incarcerated pig or chicken. From animals 'grown' like mere commodities and fed on the fruits of deforestation. Without ending the intensive farming conditions that promote the emergence of novel strains of viral disease, the next pandemic could well be on our plate.

Animal Welfare Legislation In Africa: A Case Study Of Nigeria

Honourable Garba Datti Muhammad

There is a general perception in Africa that animals are undeserving of welfare. This attitude is strengthened by poor economic conditions that lead people to chuckle at the purported travesty of animal welfare in the face of unfulfilled human needs. This attitude has trailed animals generally regardless of their utility.

It is an attitude that appears to have also affected legislation with respect to animal welfare. And given that budgetary allocations meant for improving animal welfare are generally tied to annual appropriation legislation in contemporary constitutional arrangements, the budgetary allocations to zoos and wildlife parks appear to be generally determined based on the same principle.

This is a principle based on the welfare of the animal as an end in itself rather than as a means to an end i.e. that towards accomplishing human sustainability, it is inevitable that sustainability is attained for animals, the inexorable precondition for which is welfare. This paper, therefore, analyses, using Nigeria as a case study, the commitment of African legislatures to this often understated aspect of sustainability. The study is conducted using a doctrinal methodology. The paper finds, amongst others, that the commitment to animal welfare is near non-existent and that this is evident in the dearth of or slow pace of animal welfare legislation. The paper recommends, amongst others, the urgent need in Nigeria both for a general animal welfare legislation and specially dedicated legislation to address the peculiar needs of species.

Speakers Profile



ISAIAH OTIENO

Isaiah Otieno holds a Master's degree in Information Technology from Strathmore University and a Bachelor's degree in Information System Technology from United States International University (USIU). Isaiah worked in the IT field for a period of 10 years before following his passion in environment and joining UNEP in 2014. At UNEP Isaiah has been the focal point for organization from the Africa region by ensuring that Major Groups and Stakeholders

are engaged meaningful in the work of UN Environment's Governing Bodies. Isaiah oversaw the signing of MOUs with a number of accredited organizations from Africa to enhance collaboration between UNEP and these organizations.

Such MOU saw UNEP and Africa Network for Animal Welfare (ANAW) organize annual conference named Animal Welfare Conference. The first and the Second conference took place in Nairobi Kenya. The third conference took place in Addis Ababa, Ethiopia while the fourth conference that was to take place in Accra Ghana had to be held virtual due to the COVID-19 pandemic. Isaiah has six years' experience in the UN system, working with the civil society in the environmental advocacy sphere.

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DR LINDA EVANS
BVETMED MRCVS

Linda qualified in 1979 and worked in mixed practice for 18 years before working for government for 19 years, where she specialised in disease control and eradication. Her work included advice on policy development, legislation, enforcement and implementation of policy, and she took a lead role during outbreaks of notifiable disease. She represented the UK on an EU Task Force, advising member countries on eradication of disease and she set up and worked collaboratively with stakeholder groups across all sectors

in the UK to support the programme for eradication of bovine TB.

Linda joined The Donkey Sanctuary in 2017 and has formed the Veterinary Policy Advisory Services Team which maintains an overview of biosecurity, zoonosis and of global risks to disease spread. She currently chairs the technical group for the International Coalition for Working Equids (ICWE) and leads a project to improve welfare for donkeys that are farmed.

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Dr. M.D. Kinoti is Professor of Management and Leadership, and Chair of the Masters of Nonprofit Management at Regis University. He teaches graduate courses in Peace and International Development.

DR. M.D. KINOTI

Trends of Training and Research in One Health: Necessary step for Emergency Preparedness and Response to Outbreaks in Africa



DJATOUGBE AZIAKA

President and founder of WELFARE Togo, Djatougbe Aziaka is the current co-facilitator of UNEP NGO MAJOR GROUP (mandate 2021 – 2023).

Journalist by profession (youngest female journalist entrepreneur), she is the owner and Director of Media Company ECO CONSCIENCE TV in Togo (thematic media focusing on environment and gender).

Human Right activist, Djatougbe holds a Professional Bachelor Degree in Journalism at Institute of Information Sciences, Communication and Arts (ISICA), University of Lomé and a BA in Languages. She have more than 8 years' experience on social, environmental, gender and cultural, issues working as a journalist (print, radio, TV and social media).

She is also a regular participant in the UNFCCC, UNCCD negotiations and other negotiations under UNEP, SAICM and BRS Conventions. She served as representative of Africa region in CSO panel of United Nations Convention to Combat Desertification (UNCCD) for the biennial term 2018-2019.

The organization that she leads, WELFARE is involved in capacity building projects in rural communities in which rural people are trained on how to utilize forest and wildlife resources in a sustainable manner. The organization works also for Peace and Good Governance, capacity building of youth, young women, involvement of youth in sustainable development process, decision making. On the field, we are conducting advanced actions in environmental education.



MWENDA MBAKA

Dr. Mwenda Mbaka is a Kenyan Veterinarian who also holds a Master's Degree in Veterinary Public Health. He has undertaken numerous consultancy services in Kenya and other countries in Africa, in the areas of Veterinary Public Health, Animal Welfare, and the formulation of Animal Resources Sector Policies. Mbaka taught Animal Health at the Chuka University in Kenya, where he was the Chairman of the Department of Animal Science during his tenure.

He has also served as the Chairman of the Kenya Veterinary Board, and the President of the Team of Experts to establish and operationalize of the African Union's Association of African Veterinary Statutory Bodies. He currently serves in the Invasive House Crow Eradication Technical Committee of Kenya Wildlife Service, and the Legislation Review Committee of the Kenya Veterinary Medicines Council. Mbaka also served as Africa Region External Affairs Advisor to World Animal Protection, which is one of the leading animal welfare organizations globally. He recently founded the Traceable Quality Indigenous Chicken Meat Program, which is an innovation based on high-welfare chicken production and a pricing model that de-risks chicken farmers from the fear that makes financial services from financial institutions inaccessible to them.

Mbaka is a dedicated Pan-Africanist, a conservationist, and a passionate champion for Animal Welfare. He has been awarded an Environmental Conservation Award by the Ministry of Culture and Tourism in the Machakos County of Kenya; and a Veterinarian of the Year Award by the Kenya Veterinary Association.

Changing Social Norms and Individual Behaviors: Cultivating Regenerative Virtues through Education and NGO Outreach



PROF. JANET RUMFELT

Dr. Janet Rumfelt is Professor and Chair of the Liberal Arts Department at Regis University in Colorado. Her research and teaching is focused on the environmental humanities where she draws on religion and philosophy to address conservation issues. She is editing a volume on religion and animal extinction and also contributing an article to that volume. Dr. Rumfelt is active in nonprofit work. She is the founder of Running Wild, a 5K and 1-mile fun run that promotes

awareness about imperiled African species and raises funds for African conservation organizations and she is also the Board President of ANAW-USA.



DR. KATHERINE BAXTER

Dr. Katherine Baxter joined the ANAW-USA team as Operations Manager in July 2020. She has worked in academia, education, government, and the non-profit sector, in the U.S., Europe, the Middle East, Southeast Asia, and East Africa, always endeavoring to forge regenerative and holistic solutions to complex social and environmental problems. Her work has centered around youth, global education policy, social change, and animal rights, and she is driven by a commitment to creating a world free of suffering for all living things.

She holds an MSc in Global Social Change and a scholarship funded Ph.D. in Sociology from the University of Edinburgh and has lectured on the following Masters and Undergraduate courses at the University of Edinburgh: 'Theorizing and Researching Global Social Change', 'Sustainable Development', 'Global Education Policy', 'International Perspectives on Education and Training', 'Gender and Development', 'Globalization', and 'Social Movements'. She is co-founder of the non-profit American Canary and co-founder and former co-director of the University of Edinburgh based charity LIVED.

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DAVID GIES

Mr. David Gies guided the board of directors for the Animal Assistance Foundation successfully redefine its giving portfolio diversifying the Foundation's annual giving from one veterinary hospital to many humane organizations. Today, the veterinary hospital is a program of a major animal shelter. Prior to this he led several nonprofits, schools, and philanthropic organizations expand effectiveness and efficiencies. Over the course of his career programs missions ranged from human health, K-12 Education,

poverty prevention and the performing arts.

His experience includes establishing the national fundraising unit for the National Stroke Association, executive director for the Bonfils-Stanton Foundation, and director for the Anschutz Family Foundation. Prior to his private philanthropy endeavors, Mr. Gies worked in the public sector as a grant administrator managing the distribution of Federal funds through Colorado's Department of Human Services. Along the way he taught Non-profit Management at Regis University and established the Kenya travel course at the University of Denver, Graduate School of Social Work where he is currently a Scholar in Residence.

He has an undergraduate degree in Social Sciences from Colorado State University, an M.S. in Management of Rehabilitation Facilities from De Paul University, Chicago Illinois, and Master of Public Administration (M.P.A.) from the University of Colorado at Denver.

During many decades, Mr. Gies has led the development of philanthropic interests in the public and private sectors. In 2005, he met Josphat Ngunyo. Their friendship grew over the years resulting in the establishment of ANAW-USA, the nonprofit arm of ANAW in the United States. Mr. Gies continues to serve on the ANAW board of directors in Nairobi and facilitates efforts for the ANAW-USA office in Denver, Colorado.

Wildlife And Livestock Trade, And One Health

**School of Veterinary Medicine,
College of Health Sciences, Kwame Nkrumah University of Science
and Technology, Kumasi, Ghana.**



PROF. RAPHAEL D. FOLITSE

I am an Associate Professor of Infectious Diseases at the School of Veterinary Medicine, College of Health Sciences, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi in Ghana. I am the pioneer Dean of the Veterinary School and currently the Head of Department of Pathobiology. I teach veterinary medical students Veterinary Virology, Immunology, Infectious Diseases and Poultry

diseases. I had worked with the Veterinary Services Department of the Ministry of Food and Agriculture in Ghana for 25 years prior to my appointment into the university.

I graduated with DVM/MSc in Veterinary Medicine in 1984 from Ukraine Agricultural Academy, Veterinary Faculty, in Kiev. I also have a Master of Science Degree in Pathobiology from University of Minnesota, College of Veterinary Sciences, St. Paul, USA in 1997; and Certificate in Laboratory diagnosis of Poultry diseases in 1995 from Osaka, Japan (JICA Programme).

My research interest is in the detection of infectious diseases in the field and at the point of slaughter. The research is aimed at providing missing data for policy formulation towards ensuring their control, reducing their zoonotic risk, and improving availability of animal protein.



ALEXANDER JURAS

Alexander Juras worked from 1987 – 1992 as a research fellow at the Bonn based Institute for European Environmental Policy, where his work focused mainly on environmental protection in a transboundary context and environment and civil society in Central and Eastern Europe. He was the author of the first ever published comprehensive Directory of Non-governmental Organisations in Central and Eastern Europe.

In 1992, he joined the just established Regional Environmental Center for Central and Eastern (REC), where he worked until 2005. At the REC, he worked in various positions and since 1997 as the Deputy Executive Director. His responsibilities included the supervision of REC's NGO support program, a major provider of assistance to the emerging civil society in Central and Eastern Europe, REC's Information Program and the establishment and supervision of REC's Network of Country Offices in 16 countries. In 2006, he joined the Regional Environmental Center for Central Asia (CAREC) that is located in Almaty/Kazakhstan and that covers the Central Asian countries of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, as a Deputy Director. In 2008 he moved again forward and became the Deputy Director of UN Environment's Division of GEF Coordination. In March 2010 he took over the position of Chief of UN Environment's Major Groups and Stakeholder Branch in the Department for Regional Cooperation (DRC). In 2014, the Branch became part of the Secretariat of the Governing Bodies (now Governance Affairs Office) of UN Environment. In 2017, it changed its name to "Civil Society Unit". In his function as Chief of the Unit, he is responsible to facilitate and support UN Environment's relations with non-governmental stakeholders, including their participation in the United Nations Environment Assembly.



JOSPHAT NGONYO

Mr. Josphat Ngonyo is a key player in animal welfare, wildlife and environmental conservation in Africa whose notable contribution to this field has been far-reaching through the different roles he has held in his career. He is currently the Executive Director for the Africa Network for Animal Welfare where he has served since June 2006.

Prior to this, Mr. Ngonyo served as Founder and Director for Youth for Conservation (2001 -2006) and was an employee of the

David Sheldrick Wildlife Trust for 4 1/2 years, where he coordinated air-rescues of elephant orphans and was also involved in administration and conservation education.

He holds varied positions in local and international platforms which include: a member of the Global Task Force for Farm Animal Welfare and Trade, member of the United Nation's Food and Agriculture Organization (FAO) Gateway to Farm Animal Welfare Editorial Board, member of Advisory Board of the US-based LifeWatch Group, member of the United Nations Department of Public Information/NGOs committee for Africa.

In July 2012, Mr. Ngonyo was appointed by the Government of Kenya to a Ministerial Task Force charged with the formulation of an animal welfare policy and the review of the Prevention of Cruelty to Animals Act (cap 360). He was also appointed as an advisor to Kenya Vision 2030 on environmental issues. Further, he was involved in the review of the wildlife conservation and management policy and legislation in 2007, through Government appointment as member of the National Steering Committee.

In August and October 2015 respectively, Josphat was granted a consultancy by the EU Commission, Consumers, Health, Agriculture and Food Executive Agency for Sustained Technical Assistance Mission (STM) to conduct needs assessment for agriculture extension workers. Josphat, has trained on the management of not-for-profit organizations and has given talks on animal welfare, wildlife and environmental conservation through various forums held in over 15 countries worldwide. He won the prestigious Eastern Africa Environmental Leadership Award in 2003 and the Middle East Animal Welfare Award in 2007, in recognition of his dedication to animal welfare work. He holds a master degree in Leadership from Africa Leadership University

Assessing the Feasibility of Applying the Welfare Quality® Assessment Protocol for Dairy Cows on Farms in Kiruhura District, Uganda



DR. PAUL SSUNA

Dr. Ssuna Paul, is an assistant lecturer at Makerere University in Uganda. He is a researcher and advocate for animal welfare in Uganda and Africa at large. He holds a Bachelor's Degree in Veterinary medicine from Makerere University (2017) and a Master's Degree in Applied Animal Behavior and Animal Welfare from the University of Edinburgh, UK (2020). Since 2018, he has taken up the mantle as the coordinator of Animal Welfare and Health traineeship

for animal science students at the College of Veterinary Medicine, Animal Resources and Biosecurity in Makerere University. He was also involved in several animal welfare research projects including studies to investigate how farmer behavior and practice affect the welfare of dairy cows among selected farms in Kiruhura district, Uganda- supported by Welttierschutzstiftung (WTS) (2020), how maternal deprivation affects milk yield and udder health among dairy cows in Germany (2020) and Feasibility and Practicability in Using the Welfare Quality Protocol® on Dairy Farms in Kiruhura District, Uganda (2021). Other outreach projects involved in are: project to save working donkeys from ill health due to poor harnessing in Kween district, Uganda, supported by Brooke Hospital for Animals (2018) and the establishment of clinical skills center at Makerere University supported by SPANA (2021). He is also largely involved in student mentorship, mobilization and empowerment, trainer in leadership and team building in One Health and One Welfare.

Trends of Training and Research in One Health: Necessary step for Emergency Preparedness and Response to Outbreaks in Africa



**EMIKPE BENJAMIN
OBUKOWHO**

Emikpe Benjamin Obukowho, a Professor of diagnostic pathology with great research interest on One health. Former Chair, Department of Veterinary Pathology, University of Ibadan, Nigeria, Professor of Avian pathology and vaccinology, Pan African University of Life and Earth science, Ibadan, Nigeria. Currently, Dean, School of Veterinary Medicine, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

My research had been on diagnosis of endemic, emerging and zoonotic diseases affecting livestock, zoo and threatened wildlife. My interest is on pulmonology with intranasal vaccination approaches to control of major pneumonia (PPR) in domestic small ruminants and use of phytogenic delivery of Newcastle disease and Infectious bursal disease vaccines in poultry. Current research is on zoonoses of reproductive concern. I have graduated 21 doctoral students and currently, supervising 13. I have published over 370 publications and had been plenary speaker in international conferences and workshops on livestock and wildlife disease diagnosis. Associate Editor, Heliyon Biology (Elsevier), Frontiers of Veterinary Science (Experimental and Veterinary Diagnostic pathology section) Deputy Editor in-Chief, African Journal of Biomedical Research (Scopus indexed), Editorial Board Member, Pan African Medical Journal (One Health), Bulletin of Animal Production and Health in Africa, Umudike Journal of Veterinary and Allied Sciences, Clinical Bulletin. External Examiner and Professorial assessor for Universities in Nigeria, Ghana and Sierra Leone. I have won some notable International grants: The John D. and Catherine T. MacArthur Foundation USA, Foreign Affairs and International Trade Canada, USDA- APHIS USA, German-West African Centre for Global Health and Pandemic Prevention (DAAD Sponsored), AU-IBAR, AAU-ECOWAS.

Animal Agriculture and their link to Global Pandemics Concept Note



PAVITRA KRISHNAN
(DVM, PHD, FCVSN)

Pavitra holds a Masters degree in Economics and a Postgraduate degree in Development Management from University of Delhi. She has the experience of working in both the animal and human rights space. Her past experience includes working with the Federation of Indian Animals Protection Organisations (FIAPO) in Government Advocacy and Policy Regulation aimed towards the welfare of farmed animals. Further, she has worked with TechnoServe on a livelihood enhancement project for small-holder farmers in India. Pavitra currently leads the Global South Programme at 50by40, a coalition of organisations dedicated towards cutting the global production and consumption of animal products by 50% by the year 2040.

Animal Welfare and Pandemic Risk Mitigation - The Role of One Welfare



DR MARK JONES B.O
(DVM, PHD, FCVSN)

Mark trained as a veterinarian at Liverpool University and worked for many years in Fish Health and Disease Control, before spending five years traveling extensively and working on rescue and rehabilitation projects for primates, bears, birds, and reptiles in South America and Asia. He has Masters' Degrees in both Aquatic and Wild Animal Health, and several years' experience in the non-government animal protection sector covering international wildlife trade, wildlife management and animal welfare issues. He joined the Born Free Foundation in 2014 where he is currently the Head of Policy.

Myths And Realities of Animal Use and Alternatives in Education and Training: From Skills Acquisition to Sustainable Development



NICK JUKES

Nick Jukes is Co-ordinator of the International Network for Humane Education (InterNICHE). Nick has been working internationally for over 25 years to enhance education and training in medicine and the life sciences through replacement of animal experiments and dissection. He co-authored the book from Guinea Pig to Computer Mouse: Alternative Methods for a Progressive, Humane Education (2nd ed.) (InterNICHE, 2003) and has published

widely on alternatives. He has helped establish a range of international resources including libraries of alternatives and the website www.interniche.org, with its databases of alternatives and academic studies. Nick has co-organised conferences and exhibitions across the world and InterNICHE activity has led to widespread direct replacement. Current projects include a documentary film on humane innovations and a book of case studies. Nick, InterNICHE and its partners have won a number of awards for provision of resources, global networking and replacement work, including the Lush Prize for Training.

,Good Animal Welfare as the Cornerstone to Sustainable Development: - A South African Perspective



MORGANE JAMES

Chief Inspector Morgane James is the Manager of the Training and Outreach Units of the NSPCA. She has a Diploma in Companion Animal Behaviour and has extensive field experience with farm animals, companion animals and working donkeys in disadvantaged communities.

As an experienced lecturer, she presents lectures to inspectors and field officers as well as Animal Health students at the North West University, state prosecutors at the

Justice College and South African police service members. In addition to law enforcement, she has been actively involved with community outreach and education for many years.

She is passionate about training and the transfer of knowledge and has a special interest in the human/animal bond and the influence what positive interactions can have in creating a less violent society.

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NAZARETH APPALSAMY

Nazareth Appalsamy is a Senior Inspector in the Farm Animal Protection Unit of the NSPCA. He has thirteen years of experience working with farm animals, governmental departments, and industry. He has also been instrumental in developing several South African National published Animal Welfare Standards. Inspector Appalsamy has also been involved with the South African Department of Agriculture in developing several Animal Slaughter Regulations.

Inspector Appalsamy has 21 successful prosecutions of which 11 are finalized. Enforcing the law is just one aspect of what he does, he is also an experienced lecturer. He has also completed animal courses and is certified in Poultry Welfare, Abattoir Welfare and Production, an Aviation Course on the Transport of Live Animals.

Inspector Appalsamy deals with all farmed animals, however, he has a keen interest in Aquaculture and Crocodile Farming. With years of experience, he has contributed significantly to the humane treatment of these animals. He also has NSPCA Honorary Positions and serves on the following committees:

South African Poultry Association - Welfare Committee Member 2013-2021

National Animal Health Forum - Committee Member 2015 -2021

Livestock Welfare Co-Ordinating Committee Member / Advisor 2012-2020

South African Bureau of Standards - Registered Voting and Technical Member 2014-2021

National Stock Theft Forum Member 2012-2021

Wildlife Trade, Livestock Trade And The Impact On One Health



MEYIR YIRYELEZIEKAH

Dr. Meyir Yiryele Ziekah is a Veterinarian and currently the Manager and Resident Zoo veterinarian of Kumasi Zoological Gardens of the Wildlife Division of Forestry Commission. He is Ghana's OIE Focal Point for Wildlife Diseases and advises the Executive Director of the Forestry Commission on Wild animal Health issues. He is a part lecturer at the

College of Health Sciences, School of

Veterinary Medicine at the Kwame Nkrumah University of Science and Technology, Kumasi.

Meyir's objective is to work and rise through the ranks on merit and be part of the success story of any organization. He is a lover of nature and the cultural diversity of this world. Academically, he pursued Junior and Senior High education on the Isle of Youth, Cuba and proceeded to Universidad Agraria de La Habana, Cuba where he studied Veterinary Medicine obtaining a DVM in 1999.

In 2014, he won an EU scholarship through the INTRA ACP Mobility scheme for a Postgraduate degree in Epidemiology in Tanzania. Meyir took part in a Regional Training Course on Wildlife (Bats) Capture and Sampling for Surveying Emerging Zoonotic Diseases in Sierra Leone by the IAEA. After National Service in 1999, he worked in the private sector as the Manager of Central Veterinary Hospital, Tema, and was later employed into the Ministry of Food and Agriculture as the Veterinary Officer in 2008. He was shortly posted to the Wildlife Division as a Zoo Veterinarian in 2009. He is part of a Bat research in Ghana, and was a key member of a multinational team of researchers from ZSL and Cambridge University that undertook a science expedition to Annobon Island, Equatorial Guinea. Meyir co-authored works on Bat viruses and other works.

International Standards on Animal Welfare



DR. MOETAPELE LETSHWENYO

Dr Moetapele Letshwenyo is the OIE Sub-Regional Representative for Southern Africa (or SADC). He is a veterinarian by profession, with a Bachelor's Degree in Veterinary Medicine and Surgery from Edinburgh University and a Master of Preventative Veterinary Medicine from the University of California, Davis and a Masters of Business Administration from the University of Botswana. For most

part of his veterinary career, he worked for the Department of Veterinary Services of

Botswana primarily as a field veterinarian in several districts, before settling at Ministry Headquarters initially as the Department's epidemiologist.

In this role, he was responsible for all sanitary and phyto-sanitary matters and assisted in setting up the Veterinary Epidemiology and Economics Unit which was responsible for establishing the livestock identification and traceability system (LITS) of Botswana in 2001. He coordinated the control and eradication of several outbreaks of foot and mouth diseases in the country and made presentations and talks on animal disease control in Botswana at conferences and seminars worldwide, organized by various international organizations such as OIE, Food and Agriculture Organization (FAO), African Union InterAfrican Bureau for Animal Resources (AU-IBAR), Southern African Development Community (SADC), etc. He was a member of various technical committees of these organizations. All this culminated with an award of a "Meritorious Honour" by the OIE. He progressed to become the Director of Veterinary Services and OIE Delegate for Botswana in 2008. In 2009 he became a Deputy Permanent Secretary in the Ministry until joining the World Organization for Animal Health (commonly called OIE: Office International des Epizooties) as the Sub-Regional Representative for Southern Africa in 2014.

The OIE is a standard setting body on matters of animal health, welfare and veterinary public health (zoonosis). It works closely with member countries, through the Veterinary Services to ensure compliance to international standards, in order to facilitate safe trade in animals and their products. As the sub-regional representative Dr Letshwenyo is responsible for driving the mandate and representing the OIE in the sixteen (16) member countries of the SADC sub-region, as well as in meetings with collaborating partners.

Effects of Housing Type, Arrival Time and Feeding Management on Broiler Growth, Welfare and Meat Quality.



**DR. JACOB ALHASSAN
HAMIDU**

Department of Animal Science, Faculty of Agriculture, College of Agriculture and Natural Resources, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

Dr. Jacob Alhassan Hamidu is an Animal Scientist and a holder of PhD in Animal Science with a specialization in Poultry Embryology, Physiology and Chick Quality from the University of Alberta, Edmonton.

He is currently a Senior Lecturer at the Department of Animal Science, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi. In 2016 to 2017, he was team Fleadere of the USDA ASSESS commissioned Poultry Baseline Survey of Poultry farms in Brong Ahafo, Ashanti and Greater Accra Regions and KNUST-LGSS Needs Assessment Project of District Assemblies in Volta, Eastern and Ashanti region. He continued to work under the GPP and AMPLIER projects in Ghana until date.

He is a hatchery expert for Lohmann Tierzucht in German for troubleshooting across Africa. He is the manager of the Olympio Hatchery at KNUST. He has held grants from the Grand Challenges Canada under Saving Brain, Skills Development Fund in Ghana, DANIDA and the Alberta Livestock and Meat Agency, Canada.

His research mainly focused on poultry production, heat stress, hatchery management, and molecular and cellular basis of cell death in hatching eggs. He has over forty (40) peer reviewed publications, over thirty (30) abstracts and more than thirty (30) conference proceedings in reputable journals. He loves teaching, research, student mentoring and works closely with the poultry industry. He is married with three children.

The Detrimental Effects of Climate Change on Animal Welfare and Various Mitigation Strategies



DR. KWAKU ADOMAKO

Dr. Kwaku Adomako obtained a BSc. (Hons) Agriculture and PhD in Animal Breeding and Genetics, from the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi in 2004 and 2010 respectively. He also holds a Postgraduate Certificate in Poultry Production and Management from the Hebrew University of Jerusalem, Israel (2013), and obtained training in Molecular Genetics from the University of Georgia, USA through Borlaug Fellowship in 2015. He has been working with the Kwame Nkrumah University of Science and Technology, Kumasi since 2011. He is currently a Senior

Lecturer at the Department of Animal Science. He was the Head of the KNUST Dairy/Beef Cattle Research Station from 2017 to 2019, and Head of the Poultry Section at the Department of Animal Science, KNUST from 2012 to 2017. He is currently serving as the Coordinator for Graduate Studies, Seminar and Laboratories at the Department of Animal Science. He has served on a number of committees at various levels within the University.

Dr. Adomako has served as a Resource Person for various workshops organized for poultry value chain actors by the Ministry of Food and Agriculture, Development Partners and Poultry Farmers' Association, within Ghana and West Africa. He has also organized workshops for poultry and rabbit value chain actors through the dissemination of the findings of various sponsored research that he had conducted.

He is a member of the following academic societies: World Poultry Science Association, Ghana Animal Science Association, Ghana Society of Animal Production, Ghana Science Association and University Teachers Association of Ghana (UTAG). He is the Vice-President of the Ghana Society of Animal Production, which is the association for animal scientists in Ghana. He serves as a reviewer for a number of scientific journals including Poultry Science (USA) and Scientific African.

Donkeys and Horses and Sustainable Development in Ghana: The Impact of Donkey Slaughter and Trade and Horse Welfare



DR. ANTHONY NSOH AKUNZULE

Dr. Akunzule, Anthony Nsoh, a Ghanaian, obtained a DVM from Kharkov Zooveterinary Institute in Ukraine in 1988, MPS(Agric) in Agricultural and Rural development from Cornell University, USA in 1999 and, Certificate in Animal Welfare Science, Ethics and Law from Cambridge University, UK in 2014. Akunzule worked with the Department of Wildlife in the Accra and Kumasi zoos from 1988-1991. Akunzule

spent over 26 years working with the Veterinary Services Directorate of the Ministry of Food and Agriculture in Ghana, holding different positions such as Head of the Economics Unit of Pan African Control of Epizootics, from 2001 to 2006; Desk Officer of the Livestock Development Project of the African Development Bank from 2000 to 2006; and National Livestock Policy Focal Point of the Reinforcing Veterinary Governance Programme of the African Union-Interafrican Bureau for Animal Resources from 2010 to 2017. Akunzule was responsible for Livestock Policy and Legislation at the Veterinary Services Directorate of the Ministry of Food and Agriculture from 2010 to 2017. Akunzule was the Team Leader of the train-the-trainer from 2008 to 2010 for the USAID Stamping Out Pandemic Avian Influenza (USAID STOP AI), in which he trained stakeholders in the poultry industry, including veterinarians, poultry farmers and securities agencies. Akunzule is a member of the American Association of Avian Pathologists and the International Family Poultry Network. Akunzule received the Global Animal Welfare by the World Veterinary Association, supported by CEVA Animal Santé in April 2019. Akunzule has great interest in donkey welfare as a working animal in rural communities of Ghana. Akunzule monitors donkey mobility from Burkina Faso to Ghana on regular bases.

Animal Welfare Training at Livestock Training Agencies (LITA) Colleges in Tanzania. Experiences and Successes



JACKSON TEMBO

Jackson Tembo is an employee at Ministry of Livestock and Fisheries, Tanzania. He works as a Livestock tutor at the Mpwapwa Campus of the Livestock Training Agency Campuses located in the capital city Dodoma. He is the guardian/patron for the Students College Animal Welfare Club. He is an MSc. Student at Sokoine University of Agriculture (SUA) Morogoro, Tanzania taking MSc. Tropical Animal Production.

Jackson graduated with a BSc. Animal Science from Sokoine University of Agriculture (SUA) in Morogoro, Tanzania in 2015. At Mpwapwa College, Jackson is the Head of Department of Training, Research and Consultancy. Jackson is working with Animals' Angels for over four (4) years and mainly acts as a representative in LITA Campuses/Colleges in Tanzania. He teaches the Animal Welfare module to students who pursue their Certificate and Diploma in Animal Health and Production (CAHP and DAHP).

Trends of Training and Research in One Health: Necessary step for Emergency Preparedness and Response to Outbreaks in Africa



SENTAMU DERRICK NOAH

Sentamu Derrick Noah, a veterinarian by profession, holds an MSc in Veterinary Public Health. He is a graduate fellow who works at the International Livestock Research Institute (ILRI) and has a strong interest in zoonoses and food safety. However, he believes that the foundation to these fields is animal welfare. His research addressed animal welfare and food safety in a non-integrated pig abattoir in Nairobi, Kenya.

Trends of Training and Research in One Health: Necessary step for Emergency Preparedness and Response to Outbreaks in Africa



JENNIE HUNTER

Jennie Hunter is the Campaigns Coordinator at the Open Wing Alliance. Prior to this, she completed a campaigns fellowship at The Humane League, served as the administrative director for a horse rescue and worked at an organization dedicated to replacing animal testing with human-based alternatives. Her volunteer experience includes managing social media accounts for an animal protection organization and helping at a local rabbit rescue. In her spare time she enjoys hiking, listening to music and spending time with her son and two dogs.

One Health, One Welfare: How Protecting People Means Protecting Animals Too



PHILIP LYMBERRY

Philip Lymberry is Global Chief Executive of Compassion in World Farming, Visiting Professor at the University of Winchester, President of Eurogroup for Animals, the Brussels-based umbrella for 70 leading animal welfare societies in Europe and founding Board member of the World Federation for Animals (WFA), a membership organisation that maximises the efforts and resources of the animal protection movement. Philip has also been ap-

pointed as a United Nations Food Systems Champion for the 2021 UN Food Systems Summit. He's an award-winning author, ornithologist, photographer, naturalist and self-confessed animal advocate. Philip's critically acclaimed books, *Farmageddon: The true cost of cheap meat*, and *Dead Zone: Where the wild things were*, were the first mainstream books to show factory farming as a major driver of wildlife declines and at the heart of what needs to change to stave off the climate, nature and pandemic emergencies now facing humanity.

Exploring the Impact of Covid-19 on the Working Equid Community Across Southern Africa,

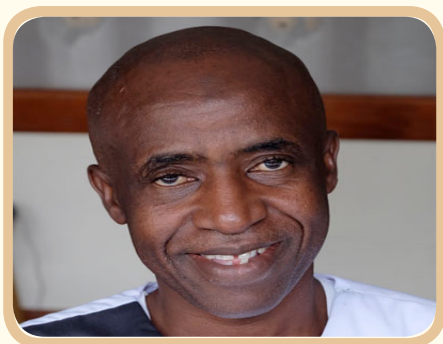


PENNY WARD

Penny has a Master degree in urban planning and twenty years of experience working with various international development organisations. Penny joined World Horse Welfare in 2014 as Regional Coordinator.

She currently supports several equine welfare organisations and NGOs in Southern Africa to work together to implement community based projects that help people to strengthen their rural and urban livelihoods through improvements to the health and welfare of their working equids.

Environmental Health, Climate Change and Animal Welfare



DR KEBBA DAFFEH B.O
(DVM, PHD, FCVSN)

Dr Kebba Daffeh is the West Africa Representative of WTS Vets United, a Berlin registered Animal Welfare Charitable Foundation with the goal of improving animal welfare in developing countries through tertiary education and capacity building. From 2016 to date, in his capacity as WTS VETS UNITED Gambia Coordinator, Dr Daffeh has been providing technical support to the University of the Gambia and Gambia College in Ani-

mal Welfare Education. He has accrued more than 25 years progressive work experience at senior technical and managerial positions in animal health, zoonosis, food safety and animal welfare. His competencies are mainly in the design, formulation planning, coordination and implementation of disease surveillance, prevention and control projects and programmes.. Some of positions of responsibility he held include: Principal Veterinary Officer responsible for Epidemiology, Disease Control and Investigation; National Epidemiologist for the Pan African Programme for Control of Epizootics (PACE- Gambia); National Coordinator FAO TCP on Early Detection, Surveillance and Prevention of Avian Influenza in West Africa; Chief Veterinary Officer Department of Veterinary Services, Director Department of Veterinary Services and OIE Delegate for The Gambia; National Coordinator Support Programme to Integrated National Action Plans- Avian and Human Influenza (SPINAP-AHI); National Coordinator Vaccines for Neglected Animal Diseases in Africa (VACNADA); National Coordinator FAO TCP on the Emergency Control of Contagious Bovine Pleuropneumonia (CBPP) in The Gambia; Director General Food Safety and Quality Authority of The Gambia. His experiences include serving as a National Consultant (Livestock Expert) for Food and Agriculture Organization (FAO- Gambia) in the design and formulation of a Climate Change Adaptation Project and a Women Empowerment Project respectively.

Animal Welfare Legislation In Africa: A Case Study Of Nigeria



**HONOURABLE GARBA
DATTI MUHAMMAD**

Hon. Garba Datti Muhammad was born on 3rd October, 1960 in Zaria, Kaduna State of Nigeria. He holds a BSc degree in Geography, and Post Graduate Diploma in Management from Bayero University Kano, a Masters Degree in International Affairs & Diplomacy from Ahmadu Bello University Zaria, a Certificate in Scenarios Planning from the Oxford University, United Kingdom, Certificate in Understanding Congressional Operations, Brookings Institute, Washington DC and Certificate in Negotiation and Decision Making Strategies from the University of Chicago, Booth School of Business.

After a 16 year stint in the public service, he made some forays into politics. In 2003, he contested and won election into the Kaduna State House of Assembly where he served as Chairman, Committee on Market Development & Inter Governmental Relations before becoming the Minority Whip.

Fired by a patriotic zeal to serve his people and the country better, he again puts his popularity to test when he contested and won the mandate to represent the good people of the Sabon Gari Federal Constituency in the House of Representatives in 2007. When the Congress for Progressive Change was formed in 2010, he was the first ANPP member in the House to join the party under whose platform he contested again and won the mandate to return in 2011.



ARNO_DE-KLERK

Senior Inspector Arno De Klerk is currently employed as the Manager of the Special Projects Unit at the National Council of SPCAs in Southern Africa.

Arno has more than 10 years experience in animal welfare and he has field experience with domestic, equine, farm and wild animals. Arno works with various types of species daily in the portfolios covered by the Special Projects Unit.

Enforcing the Animals Protection Act forms the core focus of his duties, together with uplifting the welfare of all animals.

Arno has a passion for spending time with his family which includes two Jack Russel dogs, gardening and bird watching.



SOPHIE GREGER

Sophie Greger is the Head of International Project Development at Animals' Angels, a German-based animal welfare organisation. Animals' Angels is committed to farm animals and is mainly focusing on the protection of animals during transport. The organisation works globally. Sophie has been with the organisation since 2008. Her projects are currently based in Eastern Africa and Colombia. Sophie mainly works with an educational approach to raise awareness and empathy for farm animals and to change the way they are treated.

She's in the course of obtaining her credentials as a Certified Humane Education Specialist. Sophie holds a Master of Science degree in Global Transformations/Geography of Loughborough University, UK.



DOUGLAS WOLHUTER

Wolhuter is the manager of the NSPCA's Wildlife Protection Unit and has been involved with the NSPCA and SPCA since 2002. His career in Animal Protection started at a local SPCA which he managed for 12 years. He went on to serve as the chairman of the Society and KwaZulu-Natal regional chairman for 8 years and for a period of 4 years on the National Board of Directors as KwaZulu-Natal provincial Director.

He has vast experience with all species in the field, as a law enforcement official with many successful prosecutions (in terms of national legislation) and also in leadership and governance positions in the movement. But following his passion for wildlife Douglas joined the NSPCA team from which he has a platform to nationally address the massive challenges faced in the wildlife industry.

Specialising in Wildlife Protection he serves on committees tasked with revising legislation as well as working on standards and codes of best practice to ensure the welfare of wild animals are protected both in captivity and in the wild.

Currently Douglas is spearheading welfare reform in the captive lion industry due to the ever-present welfare concerns and has thus far laid criminal charges against several facility owners and staff.



TONY GERRANS

I am an Associate Professor of Infectious Diseases at the School of Veterinary Medicine, College of Health Sciences, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi in Ghana. I am the pioneer Dean of the Veterinary School and currently the Head of Department of Pathobiology. I teach veterinary medical students Veterinary Virology, Immunology, Infectious Diseases and Poultry diseases. I

had worked with the Veterinary Services Department of the Ministry of Food and Agriculture in Ghana for 25 years prior to my appointment into the university.

I graduated with DVM/MSc in Veterinary Medicine in 1984 from Ukraine Agricultural Academy, Veterinary Faculty, in Kiev. I also have a Master of Science Degree in Pathobiology from University of Minnesota, College of Veterinary Sciences, St. Paul, USA in 1997; and Certificate in Laboratory diagnosis of Poultry diseases in 1995 from Osaka, Japan (JICA Programme).

My research interest is in the detection of infectious diseases in the field and at the point of slaughter. The research is aimed at providing missing data for policy formulation towards ensuring their control, reducing their zoonotic risk, and improving availability of animal protein.

The Role of The Aviation Industry in The International Trade of Wildlife

Dr. Patrick Muinde is a veterinarian, trained at the University of Nairobi. He has a Master of Science degree in Veterinary Epidemiology and Public health from the Royal Veterinary College, University of London.



DR. PATRICK MUINDE

Currently, Patrick is a Research Manager at World Animal Protection, an animal welfare organization envisioned in inspiring and moving the world to safeguard the welfare of animals. As a Research Manager, he collaborates with colleagues and institutions on a local, regional and global scale to provide credible evidence that informs delivery of evidence-based campaigns aimed at realizing the organization's vision of a world free of cruelty and suffering for animals.

Before joining World Animal Protection, Patrick spent six years at the International Livestock Research Institute where he worked on a variety of multidisciplinary research projects ranging from emergence and spread of zoonotic diseases, to mapping and understanding livestock value chains and associated food safety risks.

Dr. Patrick works with key stakeholders in wildlife and livestock to catalyze policy and socio-economic change that benefits animals, people and the planet, and believes that what is good for animals is good for the people and the world. Patrick envisions a world in which mankind recognizes the importance of high animal welfare standards in production of safe food, and where wildlife is protected from all forms of cruel exploitation.

I am an Associate Professor of Infectious Diseases at the School of Veterinary Medicine, College of Health Sciences, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi in Ghana. I am the pioneer Dean of the Veterinary School and currently the Head of Department of Pathobiology. I teach veterinary medical students Veterinary Virology, Immunology, Infectious Diseases and Poultry diseases. I had worked with the Veterinary Services Department of the Ministry of Food and Agriculture in Ghana for 25 years prior to my appointment into

the university.

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Exploring the Impact of Covid-19 on the Working Equid Community Across Southern Africa,



PASEKA KOMPI

Paseka is a passionate animal scientist with a wealth of research experience in Lesotho. Since 2017, he has worked with the National University of Lesotho's Equine Welfare Project, providing valuable services, education and support to equid owners.

After graduating with a Masters degree, Paseka also started to work as a part-time lecturer in the Faculty of Agriculture's Animal Science Department and he currently lectures a variety of courses on animal production and reproductive physiology.



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