CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

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Twenty-sixth meeting of the Animals Committee
Geneva (Switzerland), 15-20 March 2012 and Dublin (Ireland), 22-24 March 2012

RELATIONSHIP BETWEEN WILDLIFE TRADE AND WILDLIFE DISEASES

1. This document has been prepared by the Secretariat.

Background to the Scientific Task Force on Wildlife and Ecosystem Health

2. At its 25th meeting (AC25, Geneva, July 2011), the Animals Committee agreed to include an item on the relationship between wildlife trade and wildlife diseases in the agenda of the present meeting.

3. The issue of wildlife diseases has not featured strongly in discussions by the Parties over the years, with only passing reference made to it in Resolution Conf. 9.24 (Rev. CoP15) on *Criteria for amendment of Appendices I and II*, Resolution Conf. 10.7 (Rev. CoP15) on *Disposal of confiscated live specimens of species included in the Appendices*, Resolution Conf. 12.3 (Rev. CoP15) on *Permits and certificates* and Resolution Conf. 13.4 on *Conservation of and trade in great apes*.

4. In March 2011, the CITES Secretariat was invited by the Secretariat of the Convention on the Conservation of Migratory Species of Wild Animals (CMS) to become a Core Affiliate of the Scientific Task Force on Wildlife Diseases convened with the Food and Agriculture Organization of the United Nations (FAO) pursuant to the adoption of Resolution 9.8 by the Parties to CMS in 2009. Recognizing the potential importance of this forum, the Secretariat accepted the invitation with a view to reporting on this issue to the CITES Parties at a later stage, and already did so at AC25. In November 2011, the CMS Parties adopted a further Resolution (Resolution 10.22) on this subject where they agreed to rename this body the Scientific Task Force on Wildlife and Ecosystem Health (STFWEH) and to incorporate a previously established Scientific Task Force on Avian Influenza and Wild Birds as a thematic working group of the main Task Force.

5. The Resolutions adopted by CMS Parties do not specify the terms of reference of the STFWEH, but these were agreed by the Core Affiliates and are attached as an Annex to the present document. In spite of its name, the Task Force will mainly, if not entirely, focus on with animals.

Wildlife diseases and international trade in wild fauna and flora

6. Wildlife diseases have three main linkages to CITES implementation:

   a) International trade in wild animals and their products can spread wildlife diseases;

   b) The effects of wildlife diseases can influence CITES decisions, such as the inclusion of species in the Appendices or the making of non-detriment findings; and

   c) Trade restrictions taken for sanitary reasons can impact programmes and projects designed to ensure the sustainable use of wildlife.

   CITES also regulates international trade in products, including scientific specimens such as blood or tissue samples necessary for the diagnosis of disease outbreaks. Since many countries do not have adequate disease diagnostic capacity and rely on reference laboratories in other countries for analyses, delays in the

issuance of CITES permits can impede or prevent the rapid diagnosis of diseases in wildlife, hindering the control and prevention of highly contagious diseases.

7. International trade in wild fauna and flora is regularly cited as an important channel for spreading human, livestock and wildlife diseases, although its real importance in risk assessment is still under debate and detailed evidence about its effects is often lacking. Diseases most frequently referred to as having been spread by international wildlife trade fall into three categories:

   a) Diseases affecting wildlife populations, in particular:
      – *Ranavirus* spp.
      – Chytridiomycosis fungus *Batrachochytrium dendrobatidis*

   b) Zoonotic diseases, in particular:
      – Influenza A virus, subtype H5N1 and other subtypes (bird flu)
      – Monkeypox virus *Orthopoxvirus*
      – *Salmonella* bacterium

   c) Diseases affecting livestock, in particular:
      – Newcastle disease virus *Avulavirus* (also mildly zoonotic)
      – Psittacosis/avian chlamydiosis *Chlamydophila psittaci* (also zoonotic)

   Additionally, a number of other diseases have been linked to wildlife trade or use which mostly takes place at the national rather than international level: Ebola hemorrhagic fever (*Ebolavirus*), Human Immunodeficiency Virus or HIV (*Lentivirus*), Severe Acute Respiratory Syndrome or SARS (*Coronavirus*).

8. The Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) of the World Trade Organization encourages members to base their sanitary measures on international standards, guidelines and recommendations. In this regard the World Organization for Animal Health (OIE) (formerly the *Office International des Épizooties*) is named as a relevant organization for international standards, guidelines and recommendations on sanitary measures. The OIE is an intergovernmental organization which currently has 178 Member Countries. Its mandate is to improve animal health and welfare globally. The OIE Fifth Strategic Plan (2011-2016) makes it clear that the OIE addresses wildlife and ecosystem health in addition to its traditional focus on livestock and aquaculture. For the purposes of international trade, the most important normative publications are the *Terrestrial Animal Health Code* (standards for mammals, birds and bees and their products, currently in its 20th edition – May 2011) and the *Aquatic Animal Health Code* (standards for international trade in amphibians, crustaceans, fish and molluscs and their products, currently in its 14th edition – May 2011). The OIE produces many other standards, guidelines and recommendations relevant to the health of animals, including wild animals. The OIE has a long-established Working Group on Wildlife Diseases, which advises on health problems relating to wild animals, whether in the wild or in captivity, and is contributing to the production of a publication on *Health Risk Analysis in Wild Animal Translocations*.

9. With regard to the handling of confiscated live specimens of CITES-listed species, Resolution Conf. 10.7 (Rev. CoP15) makes clear references to the disease risks posed by either retaining the specimens concerned in captivity or releasing them into the wild. It recommends great caution in this regard. In Resolution Conf. 9.24 (Rev. CoP15), CITES Parties already take the impact of disease into account when considering proposals to amend the Appendices. It is one of the extrinsic factors that can affect vulnerability which might cause wild populations with a restricted area of distribution or suffering a marked decline in population size to be considered for inclusion in Appendix I. Resolution Conf. 10.3 on *Designation and role of the Scientific Authorities* recommends that Scientific Authorities review of available information on all biological and ecological factors, as appropriate, when formulating non-detriment findings. This can be assumed to include disease considerations where these are an important factor affecting the conservation status of a species.

10. Disease-related controls can impinge on programmes and projects designed to ensure sustainable use of wildlife. Following a number of years of unsustainable harvesting, the Argentine CITES Management Authority began in 1997 the implementation a project entitled *Proyecto Ele* that aimed at conserving the forest ecosystems of the Argentine Chaco and its people, through sustainable use of the Appendix-II blue-fronted amazon (*Amazona aestiva*) and other species of parrots. Although there are no records of bird flu in Argentina, imports of the wild birds harvested under this project were temporarily prohibited by the main market countries in 2005 under measures designed to limit the spread of bird flu. In 2007, these markets made the import ban permanent. Prohibiting access the main market counties has had a very significant impact on this project.

11. Under Decision 15.60, the Secretariat is charged with, *inter alia*, exploring ways to establish enhanced cooperation between CITES and various organizations, including OIE, through, amongst other things, a Memorandum of Understanding or the creation of a liaison group. However, this cooperation is in relation to the shipping and transport of live animals covered by Chapters 7.2 to 7.4 of the OIE *Terrestrial Animal Health Code*, rather than disease-control considerations.

Conclusion

12. The Committee is invited to:

    a) discuss the relationship between international wildlife trade and wildlife diseases in the context of the implementation of CITES; and

    b) provide any necessary advice to the Standing Committee on the significance of this issue, including a recommendation about the nature of the relationship between CITES and the Scientific Task Force on Wildlife and Ecosystem Health in future, for consideration at its 62nd meeting (scheduled for July 2012).

SCIENTIFIC TASK FORCE ON WILDLIFE AND ECOSYSTEM HEALTH

TERMS OF REFERENCE*

Background:

One of the greatest challenges of the 21st century is ensuring global food security and sustainable natural resource management given the trends in human demographics. Various methods of coping with food insecurity have been utilized including expanding livestock farming, increasing the use of forest-derived species as a source of food, and expanding the wildlife farming sector. To date, a balanced approach has not been obtained, and this has resulted in unhealthy ecological and agricultural systems worldwide. Within the context of global food insecurity and global environmental change also arises the challenge of various emerging and re-emerging diseases. Around 60% of the emerging infectious diseases in humans are zoonotic, of which 70% originate in a wide range of wildlife populations. These pathogens include deadly diseases like the human immunodeficiency virus (HIV), Severe Acute Respiratory Syndrome (SARS), H5N1 Highly Pathogenic Avian Influenza and bat-derived Hendra Virus among others.

It has become clear that while the emergence of pathogens is highly complex in nature, it can be traced back to ecosystem changes associated with an expanding human population, food insecurity, and unsustainable use of natural resources resulting in biodiversity loss and changes to ecosystem functioning. These changes can also decrease the availability of ecosystem services such as the purification of air and water, provision of food for both humans and animals, and serving as a scientific resource. Climate associated changes in ecosystem dynamics can lead migrating wildlife to alter their normal range areas, pathogens increasing in prevalence and diversity, and resource availability for wildlife becoming limited. The health of all species including wildlife, livestock, humans, and plant life are negatively impacted by decreased availability of ecosystem services.

The emergence of H5N1 highly pathogenic avian influenza had broad impacts in the health of humans, livestock, and wildlife and serious conservation concerns (seriously impacting the Bar-Headed Goose). Additionally, the prolonged outbreak resulted in critical damage to livelihoods, food security, and international trade. The H1N1 pandemic of 2009 was caused by a virus containing RNA segments from people, pigs, and birds. These pandemics affected both animals and humans, spread rapidly, affected global economies, and continue to require a coordinated and collaborative international response.

In Kazakhstan during 2010, thousands of the endangered Saiga antelope succumbed to an unknown disease within the span of one week representing a loss of over half of the local population. These migrating ruminants have been threatened over the past decade from poaching, decrease rangeland, and various disease outbreaks.

In addition to concerns about diseases impacting negatively on wildlife, food security issues and cultural preferences continue to place consumption pressure on natural resources. In order to tackle these problems, researchers, public health professionals, policy-makers and natural resource managers must work together to come up with novel solutions.

Building on the experiences of the successful Scientific Task Force on Avian Influenza and Wild Birds, COP Resolution 9.8 (Rome, 2008) calls on the United Nations Environment Programme's Convention on the Conservation of Migratory Species of Wild Animals (UNEP-CMS) and the United Nations Food and Agriculture Organization's (FAO) Animal Health Service to co-convene the Scientific Task Force on Wildlife Diseases, renamed the Scientific Task Force on Wildlife and Ecosystem Health as a result of Resolution 10.22 at the UNEP-CMS Conference of Parties in November 2011. The Task Force has the aim of identifying diseases that have a negative impact on both domestic and migratory wildlife, and that are of greatest concern with regard to food security, sustainable livelihoods, and biodiversity conservation. Through the launching workshop in Beijing, PRC, in June 2011, high priority areas were identified for technical work and publications in addition to disease-

* *The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat or the United Nations Environment Programme concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.*

specific concerns. They included: migration ecology and disease emergence, wild meat, wildlife farming, and interactions at the human-wildlife-livestock-ecosystem interface.

1. Vision

Achieve better health for ecosystems, wildlife, livestock and people by promoting an integrated scientific-approach within the “One Health” framework.

2. Purpose

To support evidence-based decision processes and tools that consider disease dynamics in the broader context of sustainable biodiversity/ecosystem management, agricultural production and food security, socio-economic development, environmental protection and conservation of migratory species, their habitats and migration routes. The scope of work will include diseases at the human-wildlife-livestock-ecosystem interface and biodiversity and ecosystem health concerns within the context of multilateral environmental agreements (MEAs), to better enable the integration of relevant work and decision-making by governments, agencies and other stakeholders.

To accomplish this, the Task Force will facilitate coordination, information-sharing, communication, and understanding between relevant organizations, networks, administrations, and professional disciplines.

3. Objectives

A. Support CMS, FAO, and major conservation MEAs (Convention on Biological Diversity (CBD), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Convention on Wetlands (Ramsar), etc.) and CMS related instruments (AEWA, EUROBATS), flyway arrangements (EAAFP, etc.) to integrate issues of livestock-wildlife-human-ecosystem health interface into their activities, approaches and resolutions.

B. Encourage One Health multi-sectoral and transdisciplinary approaches including science-based information sharing among:

- Relevant government sectors, *e.g.* ministries of forestry, environment, agriculture, public health, tourism, finance, information, education, etc.;
- Protected area authorities and stakeholders, e.g. trans-frontier conservation areas, community conservancies, natural resource managers, park wardens, etc.;
- Relevant UN agencies, e.g. UNEP, FAO, WHO; UNESCO, UNICEF, UN High Commission for Refugees, etc.;
- International technical bodies and NGOs, e.g. AU IBAR, IUCN, OIE, Wetlands International, Conservation International, World Wildlife Fund, Wildlife Conservation Society, Ecohealth Alliance, etc;
- Multinational economic development partnerships, e.g. EU, ASEAN, SAARC, ECOWAS, etc.;
- One Health Consortia, industry farmers and other stakeholders.

C. Provide a mechanism for members of the UNEP-CMS, CMS Scientific Council, FAO (ECTAD, regional representation, national staff) or other colleagues to unofficially report wildlife morbidity and mortality events and encourage further investigation of the potential causes of these events in order to facilitate improved natural resource management.

D. Promote and enact programs, initiatives, and projects that facilitate multidisciplinary One Health capacity development at academic, institutional, organizational, and community levels in order to expand the local, national, and regional capacities.

E. Raise awareness and share science-based information on cross-cutting issues on One Health, biodiversity and ecosystem services, and diseases at the human-wildlife-livestock-environment interface.

4. Membership & Structure

Philosophy: The Scientific Task Force on Wildlife and Ecosystem Health encourages linkages with any organization interested in information exchange that supports the purpose of the Task Force. It is designed to

allow for maximum participation through a number of membership categories in addition to a smaller group of core affiliates.

Co-conveners: the co-conveners (FAO and CMS) will broadly oversee activities, facilitate coordination, and identify funding opportunities, as appropriate.

Task Force Members: a group of relevant science-based organizations, associations, or individuals representing applicable disciplines with particular interest in collaboration on issues at the interface of human, wildlife, livestock, and ecosystem health.

- **Core affiliates: 6-10 affiliates**
  Each core affiliate will participate in quarterly teleconferences, attend meetings, participate in web-based communication (wiki, list server, etc.), and act as a communication & information sharing conduit. Core Affiliates will identify and develop the priority work areas and activities in addition to developing and implement the work plan for the Task Force. This group can include one NGO, but will generally consist of international organizations and representation from multi-lateral environmental agreements. Core Affiliates will have the right to vote on issues that require clearance by the Task Force (i.e. work areas, publications, outputs). Links between the Task Force and Core Affiliate websites will be established.
- **Observers: 2-3 affiliates**
  Each observer represents his or her respective organization on an informal basis and acts as a communication and information sharing focal point. Observers will be invited to participate in teleconferences and attend meetings but they will not have voting or decision-making rights.
- **Partners: unlimited**
  Each partner will provide suggestions and inputs, identify needs, and serve as a conduit for information sharing from their respective expertise, geographic area, institution, readership, etc. to the Task Force, and they will also receive outputs, information, and products developed by the Task Force. Links between Task Force and Partner websites are encouraged.
- **National Associates: unlimited**
  Countries are welcome to identify representatives from ministries, departments, or other national structures, to serve as a conduit between the Task Force and the national counterpart. Multiple country organizations/representatives are welcome and the arrangement is non-binding. Inputs, suggestions, and ideas of importance to their area of expertise from their national perspective are welcome; and outputs, information, and products of the Task Force will be shared with National Associates. Links between the country organization and the Task Force website are encouraged.
- **Student Associates: unlimited**
  Student organizations representing all academic disciplines are welcome to identify representatives to serve as a conduit between the Task Force and the student organizations. Inputs, suggestions, and ideas are welcome from this group to obtain viewpoints from upcoming professionals, and outputs, information, and products will be shared with the student organizations. Links between the Task Force website and the Student Association website are encouraged.

Working Groups: Working groups will be established on an as-needed basis, usually in response to important technical areas determined by the Core Affiliates on globally relevant current or real-time needs. Some working groups will have short-term mandates or activities, while others will be established as long-term groups whose responsibilities will be to provide inputs to the Core Affiliates on issues that need to be addressed either from a regional, taxonomic or technical perspective.

– **Technical Areas**: These are the areas within the current work plan in which the Task Force has projects.

  - **Wild Birds and Avian Influenza:** This technical area will encourage and support the continuation of the work of the FAO-CMS co-convened Scientific Task Force on Avian Influenza and Wild Birds. Updates will come out periodically about the status of AI as it relates to wild birds as well as press releases, clarifications, and coordinated responses as deemed necessary and based on the evolution and impact of this disease on wildlife, livestock, and people.

  - **Diseases of Priority to Task Force Core Affiliates:** This work area is to identify diseases of common concern to Task Force Core Affiliates. Fact sheets will be developed and made available through the website following the format of the Ramsar Wetland Disease Manual Factsheet in order to link terrestrial species (Task Force supported) and wetland-related species (Ramsar supported) diseases. Fact sheets will address diseases of importance to wildlife population health, zoonotic disease threats, and diseases of concern to livestock production and health.

- **Bridging the gap between natural resource professionals and public** health **professionals:** The economic and social benefits of biodiversity, wildlife, and ecosystem services may be clear to biodiversity/ecosystem managers, yet these values may be less apparent or unknown to biomedical professionals such as veterinarians and physicians. Similarly, aspects of disease ecology and epidemiology, or the role wildlife play in disease transmission, may be clear to biomedical professionals but unfamiliar to ecosystem/natural resource managers. For these reasons, there is a need to provide concise but important information that can be shared across professional sectors, that helps to bring greater awareness to disciplines that are beginning to work more closely together to address complex issues requiring a One Health approach. Work in this area will attempt to bridge the gaps between natural resource professionals and public health professionals using training programs, fact sheets, scientific meetings and other outreach tools.

- **Wildlife Morbidity and Mortality Event Monitoring:** This work area serves as a method for members of the Task Force to encourage better unofficial reporting through “rumour-tracking” tools as deemed appropriate by Task Force members to improve international understanding of causes of wildlife morbidity and mortality events. Since many wildlife morbidity and mortality events are caused by non-pathogen associated events including plant poisonings, environmental contaminants, natural disasters, or other non-infectious causes that are of concern to Task Force members, this system creates greater awareness about ongoing issues potentially affecting wildlife population health. The unofficial reporting system will also enable partners to provide outbreak response support either via email, by convening a teleconference, or mounting a coordinated response.

- **Human-Wildlife-Livestock-Ecosystem Interface:** Create useful communication products to address the various challenges associated with interactions at the interface of wildlife with livestock / human/ and ecosystems. Areas of specific interest include:
  - Trans-Frontier Conservation Areas: TFCAs are created in an effort to provide more natural migration patterns, ensure adequate conservation of both wildlife and ecosystems, and bring additional benefits to wildlife health. These projects illustrate the complexity of the interactions at the human-wildlife-livestock-ecosystem interface.
  - Wild Meat Harvest: Wild meat consumption can have significant implications for food security, food safety, public health, and biodiversity conservation. It is important to find solutions to this complex issue.
  - Captive/Farmed Wildlife: The use of farmed wildlife species as a source of income and livelihoods is widespread throughout the world. Unfortunately, these farming systems are not always well regulated and may not have direct oversight leading to outbreaks of disease as well as conservation concerns.

- **Migration Ecology:** The work in this area will focus on the impact of migration ecology on disease dynamics, ecosystem health, and wildlife population trends. While migration does ensure survival of wildlife species during the course of time, these animals carry with them infectious and non-infectious diseases to the new areas where they migrate. Factors such as changes in habitat use, climate change, land use development and expansion of farming systems can all lead to alterations in migration patterns bringing new species (and potential vectors of disease) into new areas thus threatening the local population. The implications of migration patterns and the changes thereof due to human activity can be significant. Additionally, migration is energetically expensive. Weakened migratory animals may be greatly impacted by changes in disease prevalence.

– Other groups may be created as needed to respond to current events and these would include Task Leads, Regional Representatives, Taxon Representatives, etc.

Note: One individual could be a member of more than one working group or technical area. The working group structure mainly serves to ensure that all main regions, taxa and thematic areas are represented.

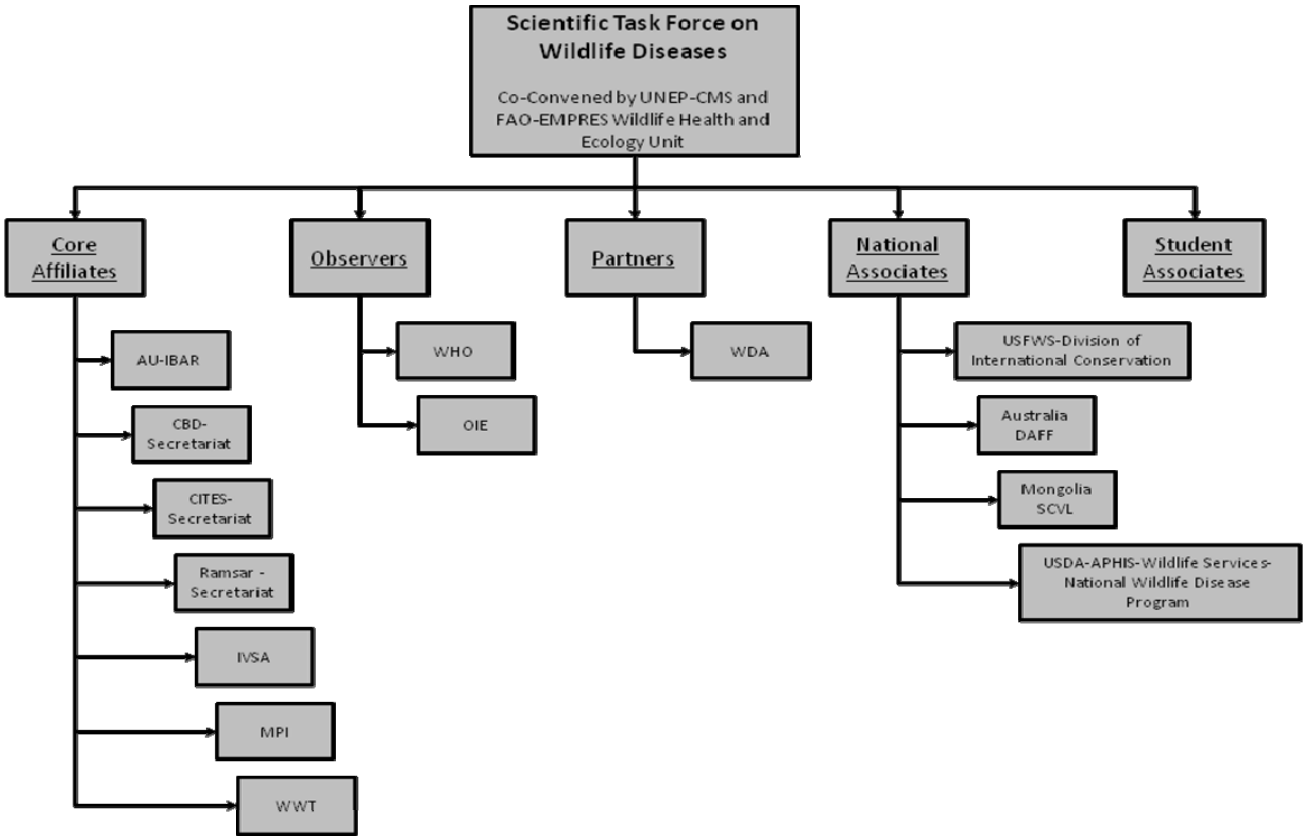

Figure 1: Membership organization of the Scientific Task Force on Wildlife and Ecosystem Health as of 1 January 2012

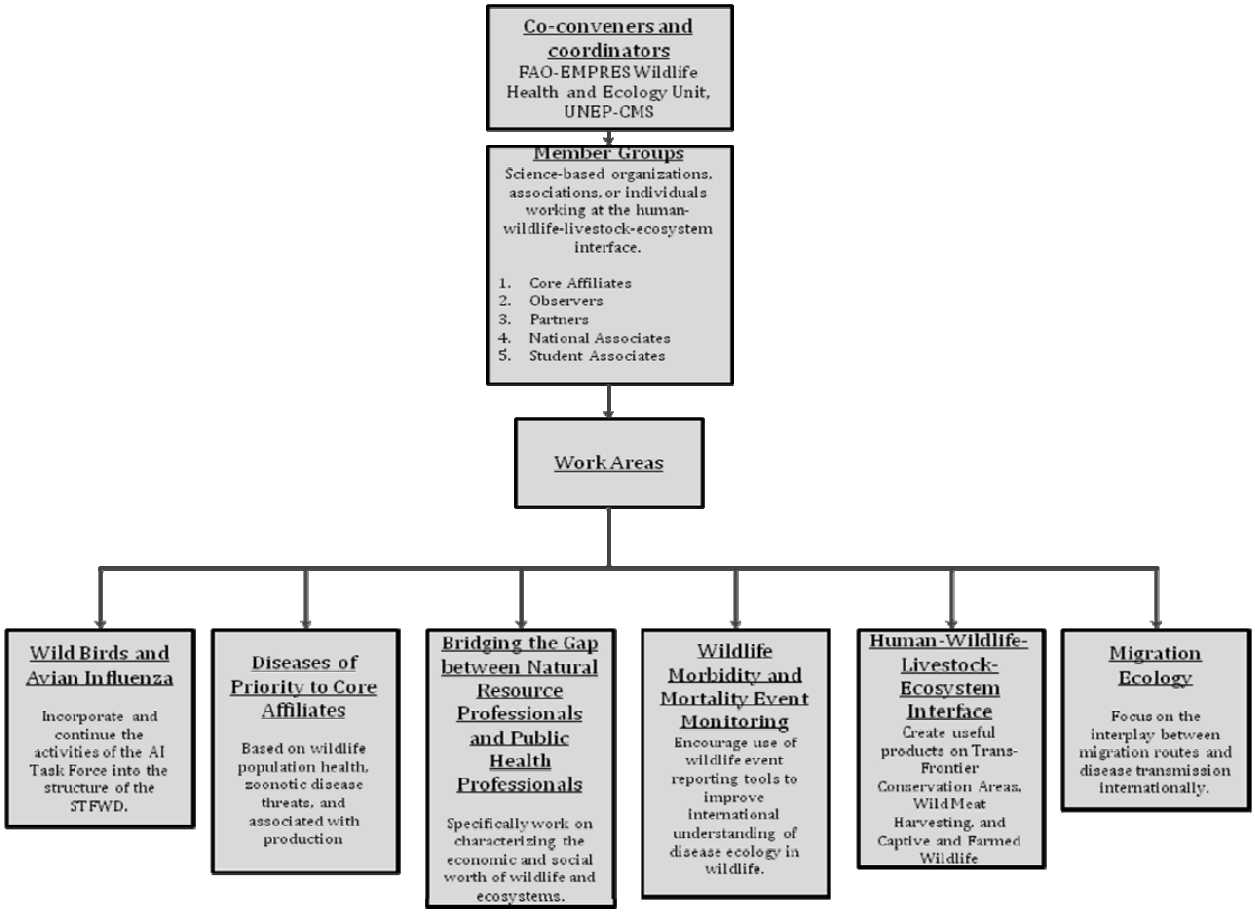

Figure 2: Structure of Scientific Task Force on Wildlife and Ecosystem Health and current work areas as of January 2012

Acronyms:

AEWA:	The Agreement on the Conservation of African-Eurasian Migratory Waterbirds
APHIS:	Animal and Plant Health Inspection Service
ASEAN:	Association of Southeast Asian Nations
AU-IBAR:	African Union- InterAfrican Bureau for Animal Resources
CBD:	Convention on Biological Diversity
CITES:	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMS:	Convention on Migratory Species
DAFF:	Department of Agriculture, Fisheries and Forestry
ECOWAS:	Economic Community of West African States
EAAFP:	East Asian-Australasian Flyway Partnership
EU:	European Union
EUROBATS:	The Agreement on the Conservation of Populations of European Bats
FAO:	Food and Agriculture Organization of the United Nations
IUCN:	International Union for Conservation of Nature
IVSA:	International Veterinary Student Association
MPI:	Max Planck Institute
NGO:	Non-governmental Organization
OIE:	World Organization for Animal Health
Ramsar:	Convention on Wetlands
SAARC:	South Asian Association for Regional Cooperation
SCVL:	State Central Veterinary Laboratory
SFA:	State Forestry Administration
STFWEH:	Scientific Task Force on Wildlife and Ecosystem Health
TF:	Task Force
UNEP:	United Nations Environmental Program
UNESCO:	United Nations Educational, Scientific and Cultural Organization
UNICEF:	United Nations Children's Fund
USDA:	United States Department of Agriculture
USFWS:	United States Fish and Wildlife Service
WDA:	Wildlife Disease Association
WHO:	World Health Organization
WWT:	Wildfowl and Wetlands Trust