

# Glossary

Specifically developed for the purposes of the International Alliance against Health Risks in Wildlife Trade by Members of the Alliance



## Terms defined in this document:

|                                      |  |                                       |
|--------------------------------------|--|---------------------------------------|
| 1) animal-human-ecosystems interface | 9g) vector (host)                                    | 24) species barrier                   |
| 2) anthroozoonosis                   | 10) host plasticity                                  | 25) spillover infection               |
| 3) conservation                      | 11) host shift or switch                             | 26) sylvatic cycle                    |
| 4) emerging human pathogen           | 12) infection  | 27) wellbeing                         |
| 5) emerging infectious disease       | 13) infectious / communicable disease                | 28) wet market                        |
| 6) feral animal                      | 14) infectious disease of public health significance | 29) wild animal                       |
| 7) hazard                            | 15) livestock  | 30) wildlife                          |
| 8) health/healthy                    | 16) novel emerging infectious disease                | 31) wildlife farming                  |
| 9) host                              | 17) One Health                                       | 32) wildlife market                   |
| 9a) dead end host                    | 18) pathogen   | 33) wildlife trade                    |
| 9b) intermediary or bridge host      | 19) pathogenesis                                     | 34) wild meat (incl. bushmeat & game) |
| 9c) maintenance                      | 20) pathogen jump                                    | 35) zoonosis                          |
| 9d) reservoir host                   | 21) peri-domestic                                    | 36) zoonothonosis                     |
| 9e) spillover host                   | 22) re-emerging diseases                             |                                       |
| 9f) temporary or secondary host      | 23) risk   |                                       |

Definitions were taken or derived from existing ones from recognized international organizations or bodies (OIE, FAO, WHO, IUCN, TRAFFIC, CITES, OHHLEP, etc.), in part modified for the purposes of the Alliance, or newly developed.\*\*

### 1) Animal-human-ecosystems interface

Means a spatially explicit point or points of (direct or indirect) contact between species which can be dispersed, linear or point interaction between individuals in a population.

## **2) Anthroozoonosis**

Means infection or disease that primarily affects other animals but can be naturally transmitted to humans (with the reservoir host being the other animal, e.g., human rabies from domestic dogs).

## **3) Conservation (In-situ)**

Means the conservation of ecosystems and natural habitats and the maintenance and recovery of diversity of species, genes and ecosystems, viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties.

## **4) Emerging Human Pathogen (EHP)**

Means a novel organism rather than just a variant (such as from acquired resistance in a known pathogen to antimicrobials or a re-emerging pathogen sometimes classified as EID) that is increasing in incidence and/or range, and has been first reported in human disease records within the last 20 years.

## **5) Emerging infectious diseases (EID)**

Means the occurrence of infections whose incidence is increasing due to new pathogens appearing in a population, or as a result of previously known organisms rapidly increasing in incidence or geographic range.

## **6) Feral animal**

Means an animal of a domesticated species (including hybrids) that now lives without direct human supervision or control.

## **7) Hazard**

Means a biological, chemical or physical agent in, or a condition of, an animal or animal product with the potential to cause an adverse health effect.

## **8) Health/healthy**

Health (of human and non-human animals) is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. It is the result of interacting biologic, social, and environmental determinants that promote and maintain health as a capacity to cope with change over time.

## 9) Host

Means a living organism which is capable of supporting a microorganism in its body or cells and can be further defined as:

### a. dead-end host

where limited replication may occur but without excretion after infection (e.g., cattle and peste-de-petits ruminants virus)

### b. intermediary or bridge host

provides a link through which pathogens can be transmitted from maintenance host populations or communities, and: (1) is competent for the pathogen or able to mechanically transmit it; and (2) comes into direct contact or share habitat with both maintenance and another host populations (e.g. passerine birds and highly pathogenic avian influenza).

### c. maintenance host

which will support a population of the organism, indefinitely, in the host population e.g., cattle and bovine tuberculosis.

### d. reservoir host

a host which if primary (co-evolved), maintains the organism independently of other hosts, does not suffer significant disease from the organism but potentially can transmit the organism to another susceptible host e.g., bats and lyssaviruses whilst; *secondary reservoirs* can establish e.g., domestic dog and rabies (Lyssa) virus.

### e. spill over host

acquires infection from a reservoir.

### f. temporary (maintenance) host or secondary host

that results in a number of possible scenarios from dead-end infection with no onward transmission, or a stuttering chain of limited transmission under natural conditions in the new host, or secondary epidemiological cycles that can be quite extensive but usually burn out, failing to persist (e.g., humans and pigs with Nipah virus spill over from bats).

### g. vector (host)

an animal (vertebrate or invertebrate) which is essential to the life cycle of the organism, carrying and transmitting it to other species over space and time (e.g., anopheles mosquito and plasmodium falciparum malaria agent).

**Note:** *Combinations of all a-g) can occur and together can act as a reservoir. Especially multiples of e) can act together.*

## **10) Host plasticity**

Is characteristic usually of a virus, which enables it to infect hosts of a taxonomically and ecologically diverse range.

## **11) Host shift or switch**

Means a parasite/microorganism/pathogen shifting to infect a new species of host (species jump) – equivalent to pathogen jump.

## **12) Infection**

Means the invasion and multiplication of microorganisms such as bacteria, viruses, fungi, prions and parasites that are not normally present within the body of an animal or plant.

## **13) Infectious / communicable disease**

Means a disorder of structure or function in a human, other animal, fungus or plant, especially one that produces specific symptoms or pathology that affects a specific location and is not simply a direct result of physical injury. To cause a communicable disease, a pathogen must successfully go through multiple barriers (or pathogenesis stages): host exposure (contact), adhesion (colonization), invasion, and infection.

## **14) Infectious disease of public health significance**

Is defined by infection with a transmissible organism (i.e., pathogen) that causes pathology and dysfunction (i.e., disease) in humans, and disrupts public health systems. It can either appear and affect a human population for the first time, or has existed previously but is rapidly spreading, either in terms of the number of people getting infected, or to new geographical areas.

## **15) Livestock**

The terms "livestock" and "poultry" are used in a very broad sense, covering all domestic animals irrespective of their age and location or the purpose of their breeding. Non-domestic animals are excluded from the terms.

## **16) Novel emerging infectious diseases (nEID)**

Means diseases caused by truly new pathogens that have newly evolved to infect humans or have adapted to humans through host switching. In this definition re-emerging pathogens, changing pathogen geographies or old pathogen variants which have emerged because of strains with different virulence or levels of antimicrobial resistance are excluded.

## **17) One Health**

One Health is an integrated, unifying approach that aims to achieve optimal and sustainable health outcomes for people, animals, and ecosystems. It recognizes that the health of humans, domestic and wild animals, plants, and the wider environment (our ecosystems) are closely linked and inter-dependent. The approach mobilizes multiple sectors, disciplines and communities at all levels of society to work together to tackle threats to health and ecosystems, while addressing our collective needs for healthy food, water, energy and air, taking action on climate change, and promoting sustainable development.

## **18) Pathogen**

Means an organism causing pathological dysfunction (disease) to its host.

## **19) Pathogenesis**

Means the processes and factors that prompt a disease or disorder, its progression and maintenance.

## **20) Pathogen jump**

Describes how an organism which is exposed to a new host, adapts over time to establishing in the new host, by chance adaptation or genetic modification as a result of mutation or recombination. It then establishes in that host possibly with disease consequences. This is sometimes described as host switching. The pathogen may or may not have ongoing zoonotic or zoonoanthropotic potential.

## **21) Peri-domestic**

Means living in and around human habitations.

## **22) Re-emerging diseases**

Means diseases that used to be major health problems globally, regionally, or nationally, and then declined dramatically, to become again health problems for a significant proportion of the population (e.g., malaria and tuberculosis).

## **23) Risk**

The probability that a situation will produce harm under specified conditions. It is a combination of two factors: the probability that an adverse event will occur; and the consequences of the adverse event. Risk encompasses impacts on human and natural systems and arises from exposure and hazard. Hazard is determined by whether a particular situation or event has the potential to cause harmful effects.

## **24) Species barrier**

Means a non-static characteristic of host(s) in which phylogeny influences the ability of a particular pathogen to adapt from one host type to another. This means that it is not able to fully cause an infection in the new host species. This is well described for viruses, where host restriction factors, determined by specific genes acting at the level of cell entry, resist infection by a particular micro-organism.

## **25) Spillover infection**

Means infection from a host, that results in another species, a dead-end infection with no onward transmission or a stuttering chain of limited transmission in the new host or secondary epidemiological cycles that can be quite extensive but usually burn out, and inclusive of (singular or numerous) events which lead to pathogen spread and independent circulation in another species.

## **26) Sylvatic cycle**

Is a natural disease maintenance or transmission cycle that involves non-human wild animals and insects.

## **27) Wellbeing**

Freedom from hunger and thirst; freedom from discomfort; freedom from pain, injury, and disease; freedom to express normal and natural behavior; and freedom from fear and distress.\*

\*Global gold standard of animal welfare, the five freedoms

## **28) Wet market**

Means a marketplace\* selling live animals, fresh meat, fish, produce, and/or other perishable goods (including vegetables) as distinguished from "dry markets" that sell durable goods such as fabric and electronics.

\*Including informal markets, legal and illegal

## **29) Wild animal**

Means an animal that lives independent of direct human supervision or control.

## **30) Wildlife**

Means feral animals, captive wild animals and wild animals.

## **31) Wildlife farming**

In the context of wildlife species such terms designate management and production modes that are distinct from “wild-sourcing”, with breeding and raising taking place in controlled conditions.

### **32) Wildlife market**

Means a venue (physical or online) where wildlife commerce is active whether live or dead wildlife species (caught wild or captive or bred in captivity), their parts, or products containing or manufactured from wildlife.

### **33) Wild meat\***

Means terrestrial animal wildlife species (wild harvested or farmed) used for food, for people in all parts of the world.

\*Sometimes referred to as **bushmeat** (usually ascribed to unregulated practices of harvesting wildlife species for food) or **game** (meat from any wild or feral animal that is hunted for food – and is culturally acceptable as a sport, recreation or harvest; regulated under existing national hunting and food hygiene legislations).

### **34) Wildlife Trade\***

The commerce in wildlife species, inclusive of parts and products derived from them. This is inclusive of both local/domestic and international commerce and both legal and illegal taking, use, and trade.

\*issues: Aside from confusion arising from differing understanding of the scope of the term “wildlife”, there are contexts in which “trade” is taken to refer only to international (cross-border) commerce (for example the usage of this term in CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora). Another important distinction is between “commerce” and other forms of exploitation, such as subsistence use.

### **35) Zoonosis**

Means any disease or infection that is naturally transmissible from vertebrate animals (animal reservoir) to humans (WHO 2020a); either directly – via contact or aerosol, or indirectly – via food, fomite or vector (usually arthropod).

### **36) Zoonanthroponosis**

Means an infection or disease that primarily affects humans but is naturally transmissible to animals (with the reservoir or maintenance host being the human e.g., SARS coronavirus 1 and 2 – causing SARS and COVID-19).

*\*\* This document was developed by Working Group 1 during the Alliance Incubation Phase with the following members: Barbara Maas, Christian Drosten, Colman O Criodain, Ekta Patel, Garo Batmanian, Hernan Caceres-Escobar, James Compton, Joan Carling, Lisa Farroway, Mary Ann Manja Bayang, Molly Crystal, Ralph Buij, Richard Kock, Roland Melisch, Sabri Zain, Sandra Altherr and Sascha Knauf in March 2022.*