

## Position paper: EU Partnership Animals Health and Welfare, “Healthy animals for a healthy world”

### Initiative of the SCAR Collaborative Working Group on Animal Health & Welfare Research

Animal diseases threaten the lives of animals, compromise their welfare, engender significant food loss, endanger the integrity and diversity of ecosystems, jeopardise the livelihood of farmers and the socio-economy of regions and nations, cost billions of Euros for control and mitigation and place human lives at risk, whether directly by zoonotic transmission or indirectly by compromising food security.

Animal health may thus have both direct and indirect impacts on the main cornerstones of Sustainable Development, as well as on most, if not all, of its 17 goals but notably on the following:



Nevertheless, these impacts could be largely mitigated if powerful instruments for anticipation, prevention, detection and intervention existed. Development of such instruments, however, will require a new generation of research and innovation addressing key knowledge and technological gaps and implemented through deep coordination between member states and stakeholders according to prioritised objectives.

### *Context and needs*

European livestock industry has an important role in European and global food and nutrition security. It contributes to securing the provision of safe and healthy food for European citizens while responding to diversifying demands. This industry contributes substantially to the European economy and to the vitality of many European territories. It also contributes to human wellbeing via landscape heritage, gastronomy and tourism, especially in European grassland based landscapes.

It is accepted that good **animal welfare** practices make animals more resilient to pathogenic challenges, improve animal survival, reduce production costs and increase profits, and, in so far as they enhance the productivity of the poor's major productive asset, help to eradicate poverty ([www.wspa-international.org](http://www.wspa-international.org)). The [European Commission's Green Deal](#) (January 2020) mentions the specific role of animal welfare as a sustainable action in both the Green Deal and the Farm to Fork Strategy.

However, while many animal health and welfare issues that are still present in Europe are yet to find an effective and/or socially-acceptable solution, the livestock industry is under growing pressure due to the mounting frequency of **new and re-emerging pathogens** resulting from intensification, globalisation, trade development and climate change. These conditions increase the pathogens' potential for establishment and spread, both for terrestrial and aquatic animals. In addition, the OIE states that about 60% of existing human infectious diseases are **zoonotic** and that at least 75% of emerging infectious diseases of humans are of animal origin (*e.g.*, the recent CoViD 19 worldwide outbreak), underscoring the importance of animal health for humans. At the same time, the sometimes irrational or even excessive use of pharmaceuticals including antibiotics, in livestock has

favoured the emergence of **antimicrobial resistance** in both pathogens and their potential vectors, which is now a source of therapeutic deadlock, with grave **consequences for public health**.

These challenges urgently need to be addressed by animal health and welfare research. **Animal health research** provides understanding of pathogens, host-pathogen interactions and pathogen and vector epidemiology. It thus contributes to innovation in the development of new tools and methodologies for early and precise detection, risk assessment, prevention and control (biosecurity, vaccines and treatment measures). **Animal welfare research** provides knowledge on welfare hazards, their consequences and potential indicators. It thus contributes to innovation in the development of tools and methodologies for identifying more welfare-friendly methods, procedures or practices, and animal-based measures for identifying their welfare consequences, as well as preventive and corrective/mitigation measures to limit or minimise them.

These two areas of research, animal health and welfare, are thus mutual prerequisites of each other. It is useful to note that animal health and welfare is placed under the jurisdiction of regional and national authorities according to European and international (*e.g.*, OIE) regulations or standards and thus needs to be approached at a pan-European and even global scale.

### **Objectives**

Through a transversal, interdisciplinary and intersectoral public-private coordinated approach, an Animal Health and Welfare partnership could provide sustainable and innovative solutions to **tackle animal infections and diseases**, including those transmitted between animals (domestic or wild – farmed, captive or companion animals) and from animals to humans (**zoonoses**). Such solutions should exploit advanced technologies and pharmaceuticals, and innovative pharmaceutical production platforms and procedures as well as novel feeding and breeding strategies.

Such a Partnership could also steer European research on **animal welfare** and propose measures for its improvement. It should emerge as a major actor in the fight against **antimicrobial resistance**, implementing the **One Health concept**. This will require novel strategies for prevention and management of diseases, along with the development of risk management strategies. The Partnership would concentrate mainly on production animals, and where relevant also on companion animals and wildlife.

Animal Health is a global issue and requires global coordination. Individual EU member states, public institutes, or private sectors and companies support animal health, but cannot alone meet this ambitious objective. Therefore, a collaborative and concerted effort for the improvement of basic knowledge on pathogens/hazards and host-pathogen interactions as well as the development of the much needed solutions to the challenges provided by animal infections and new technologies is required. The Partnership would also encourage concertation with other European initiatives and engagements with the rest of the world. **International coordination with support of relevant national, regional and European authorities, other European Partnerships and relevant projects** would guarantee efficient dissemination of the outcomes, thus ensuring **maximum impact**.

The scope of the Partnership would be broad, but the main objectives could be as follows:

- To develop research activities on the epidemiology of animal pathogens, both regulated and production diseases, in various populations, including farmed fish, wildlife and minority species (for instance cold-blooded animals, honey bees, etc.): host-pathogen interactions, spread among animals and the environment, vector-borne diseases including their arthropod vectors, anti-drug resistance (other than AMR), disease modelling, the role of animal health in circular economy, etc.;
- To coordinate research & innovation efforts on improved and new diagnostics (detection, characterisation) and control measures (notably vaccines but also containment, reduction and eradication methodologies, on-farm biosecurity and modern digital technologies like sensor

technologies and remote sensing, etc.) where both private and public research organisations could join expertise;

- To strengthen animal health as part of the One Health approach (link with public health and the environment), to study zoonoses and cross-sector infections and threats, also in respect to safety of food products of animal origin and taking into account aspects of the circular economy (feed production), to facilitate prevention and intervention activities across sectors and complementary to the research and other activities that might be developed in EU Partnerships Food Systems and Blue Economy;
- To fight against AMR (resistance in animal bacterial pathogens, viruses, parasites and fungi) aiming at the development of appropriate and alternative prevention measures and treatment regimes of sick animals, and complementary to the research and other activities that might be developed in EU Partnership One Health-AMR;
- To reinforce the preparedness and support-to-policy activities of first line and reference laboratories for the timely detection of (re-)emerging infections and disease, taking into account the evolving epidemiological situation and climate change;
- To study the interaction of animal welfare in terrestrial and aquatic animals with animal health, including new ways to design husbandry methodologies leading to improved animal health and welfare;
- To stimulate the efficient cooperation between the animal health and welfare sectors and its stakeholders (farmers, vets, authority, industry, ...), to foster a coordinated, integrated system management approach;
- To clarify the role of animal health and welfare in the society (socio-economic value and export, leisure, societal request for healthy and well-kept animals (welfare)), and the influence of the changing society on food producing animals: tendency towards less red meat consumption, aversion against animals in capture, against slaughtering of animals, against vaccination, etc. and study mitigation measures to overcome these societal challenges.

Through **coordinated public-public and public-private collaboration** of European actors, such a EU Animal Health and Welfare Partnership could **ensure reduced socio-economic and environmental impact of health and welfare issues, protect the economic viability of farms and provide a source of safer and healthier food, with the ultimate goal of delivering healthy animals for a healthy world.**

Many initiatives to encourage research on animal health and welfare already exist in Europe and beyond (e.g. CWG AH&W Research, STAR-IDAZ IRC, EPIZONE, OneHealth EJP and others) in addition to the numerous actions of private partners. The Partnership would look for adequate multidisciplinary competences to deliver all objectives and obtain significant impact. A European consortium based on the CWG AH&W, the network of existing research centres and national reference laboratories for animal health and welfare, and that reaches out to private partners and the wider academic community, is in the best position to harmonise and integrate such efforts.

#### ***Platforms: areas of research and other coordination activities***

Within the Animal Health and Welfare EU Partnership, a set of platforms corresponding to the major challenges would be created to assemble the expertise required to prioritise research needs and steer novel research and innovation initiatives to fill key knowledge and technological gaps. Innovative solutions would be sought to address threats to animal health and welfare, whether present or future. Areas of research may be: regulated diseases, other major infectious diseases and complexes, animal welfare, welfare indicators and management, data management and sharing, epidemiology and surveillance, diagnostics, vaccines, biomarkers, microbiome, treatment and intervention solutions, anti-drug research, zoonoses, sharing of infrastructure, new technologies, etc.

**In close collaboration** with key stakeholders (see list below), research centres, relevant ministries (responsible for agriculture, research or public health) and funding organisations **major areas of**

**research** will be defined, and **priority research topics** will be chosen. To this end, advanced analytical methods and forecast methodologies (for instance multi-criteria decision making, Delphi studies, etc.) will be used to define a **roadmap and research strategy agenda that is approved and supported** by most animal health and welfare parties.

Possible (sub)platform	Main activities	Main partners	Financing
Fundamental animal health and welfare research	Immunology, vaccinology, host-pathogen interactions, phage-pathogen interactions, vector biology, biomarkers, host/pathogens genetics & genomics, microbiome/ metabolome/pathobiome, resistome, welfare related research	Industry, academics, research institutes	In cash, in kind
Notifiable diseases	Epidemiology, preparedness, biosecurity, resilience	Reference laboratories, authority/CVO	In kind
Other major infectious diseases and complexes	Epidemiology, preparedness, biosecurity, resilience	Academia, research institutes, industries	In cash, in kind
Data management, epidemiology and surveillance	Data sharing, data treatment, early warning, modelling	Reference laboratories, authority/CVO; research institutes, academics (modelling), livestock industries	In kind, in cash
Diagnostics Welfare indicators	New methods, sensors/precision technology, point of care, early warning, sampling methods, biosecurity	Industry, reference laboratories and centres, research institutes	In cash, in kind
Vaccines	New vaccines and vaccine strategies, platforms, Vaccine resistant strains, metagenomics, DIVA	research institutes, industry(?)	In cash, in kind
Treatment and intervention solutions		Research institutes, academics	
Anti-drug research ('to reduce classic drug use')	Alternatives to AM, management, biosecurity/animal hygiene, monitoring the spread of anti-drug resistance- Efficacy and novel solutions for cleaning and disinfection	research institutes, industries	in cash, in kind
Zoonoses	Feedstuffs, direct /environmental contact, new/alternative ways of feed and food production, sources of contamination Early detection, risk analysis regarding (cross-sector) spread	research institutes, reference laboratories, industries	in cash, in kind
Sharing of infrastructure	BSL3 lab, animal facilities, expensive equipment, experts data	Reference laboratories, authority/CVO, Academics, Industry, research institutes	In kind, in cash
New technologies	Gene editing, gene drive, Smart farming, ubiquitous and distributed computing, remote sensing, data, genetic/genomic epidemiology Novel breeding and feeding strategies	research institutes, industries	In kind, in cash
Animal welfare	Experimental breeding facilities to evaluate new welfare-ready breeding technologies Reduction of mortality of young animals Improving AW during transport and at slaughter	Academics, research institutes, reference centres livestock industry	In kind, in cash

	Best practices for keeping animals in systems that do not require mutilations		
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### Expected Outputs

The result of the public-public and public-private activities in the various fields of expertise (see platforms) could be:

- a coordinated state-of-the-art research in the field of animal health and welfare, to shorten the path to innovative tools and technologies,
- more efficient and better prepared veterinary laboratories with up-to-date methodologies for the timely diagnosis of to (re)-emerging animal infectious diseases (more efficient networks),
- improved knowledge on welfare hazards, their consequences and potential indicators, better identification of unacceptable animal-breeding methods, procedures or practices,
- new intervention (e.g. diagnostics, vaccinology technology) platforms,
- increased preventive healthcare for public – One Health approach,

thus providing all farmers, veterinarians, livestock industries, private companies (diagnostics, vaccines and pharmaceutical industry) and competent authorities with the most recent knowledge and best possible tools and practices to end up with healthy animals, kept in good welfare conditions and safe animal products.

### Governance structure

The basic structure of the EU Partnership Animal Health and Welfare envisages the combination of two approaches:

#### 1. A Co-funded partnership dimension, *i.e.*

- **Funding partners** will mobilise internal and external budgets, e.g. from pharmaceutical, biotechnical or diagnostic industries and livestock industries and cooperatives to organise open calls and thus reach out to e.g. other academic labs and private partners. The aim of the resulting research will be to perform research on relevant animal infections and diseases (incl. zoonoses and antimicrobial resistance of animal pathogens), to bring in lacking expertise and to capitalise on the involvement of the best available science through open competitions.
- **Research institutes & reference laboratories** for infectious animal diseases will organise internal calls (among these partners) aiming to harmonise and align methodologies and increase preparedness and dissemination of results to stakeholders with reference to regulatory diseases (incl. AMR).

#### 2. A Co-programmed partnership dimension with industry, to develop new diagnostics, vaccines, alternatives to antimicrobials and management techniques.

The existing consortia (CWG AH&W Research, STAR-IDAZ IRC, EPIZONE, OneHealth EJP, etc.) already unite research institutes, academic institutions and universities as well as reference laboratories for animal health and welfare in Europe, and include national funding agencies to encourage research in these fields. Therefore, the joint effort of CWG AH&W, EPIZONE, One Health EJP and STAR-IDAZ would be the preferred basis for connection with private partners and foundation of the EU Partnership.

### Expected consortium

Major consortia that are best positioned to build the EU Partnership Animal Health and Welfare on:

- [EPIZONE](#)
- [One Health EJP](#), consisting of public institutions active in animal health, as well as food safety and public health

- [SCAR CWG Animal Health & Welfare](#)
- [STAR-IDAZ](#)

New technologies and expertise shall be looked at via

- [Animal Health Europe](#)
- [COPA COGECA](#) (European farmers, European agri-cooperatives)
- [Diagnostics for animals](#)

*Stakeholders (existing networks, consortia, possible partners and partnerships)*

[Animal Health Europe](#)

[Animal Task Force](#)

[COPA COGECA](#) (European farmers, European agri-cooperatives)

[Diagnostics for animals](#)

[DISCONTTOOLS](#)

[EASVO](#) (European Association of State Veterinary Officers)

[EAVLD](#) (European Association of Veterinary Laboratory Diagnosticians)

[EFSA](#) (European Food Safety Authority)

[EMA](#) (European Medicines Agency)

[FESASS](#) (European Federation of Animal Health Services)

[FVE](#) (Federation of Veterinarians of Europe)

[ICRAD](#) ERA-Net

[JPI AMR](#) & [JAMRAI](#)

Livestock industries: FABRE, EATIP, ECIP, EUPIG

[OIE](#) (World Organisation for Animal Health)

[OneHealth EJP](#)

[SCAR CWG Animal Health & Welfare](#)

[STAR-IDAZ](#)

[VetBioNet](#) (Veterinary Biocontained facility Network)

[Welfare Quality Network](#)

*Stakeholders for Welfare:*

[CIWF](#)

[EU Platform on Animal Welfare](#)

[Eurogroup for Animals](#)

EU Reference Laboratories (Animal Health/AMR/Food safety) and Centres (Animal Welfare)

EU Partnership Safe and Sustainable Food Systems for People, Planet and Climate

EU Partnership One Health-AMR

EU Partnership Blue Economy