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POLICY RECOMMENDATIONS

Belgian One World One Health Vision Towards Prevention of Zoonotic Disease Emergence

A paradigm shift from response to deep prevention

Summary of key policy recommendations

1. Establish a comprehensive, **cross-cutting One World One Health governance** at Belgian level, to support proactive and integrated preventive measures to zoonotic disease emergence, based on deep prevention;

2. Elaborate a c**omprehensive and cross-sectoral national action plan** to implement the One World One Health approach on the prevention of zoonotic risks;

3. Establish and promote **integrated, aligned and complementary monitoring and surveillance programmes** through harmonised methodologies and cross-sectoral collaborations, supported by appropriate public funding;

4. Provide funding opportunities for One World One Health scientific research into preventing the emergence of zoonoses at national and international levels, facilitating coordination for multidisciplinary projects and enabling targeted scientific research;

5. Develop a One World One Health socio-educative programme related to prevention of zoonotic diseases emergence in a view to inducing a long-term behaviour change in society;

6. Provide more support for, and learn from countries with a higher risk for the emergence of zoonotic diseases and assist the global community in protecting high-integrity ecosystems to reduce risks of future pandemics of zoonotic origin;

7. Voice the One World One Health approach at European and international levels, and advocate its integration into relevant policies.

CONTEXT

Policy briefs are developed to summarise an issue and formulate recommendations that are accessible to a non-specialist audience, including public policy recommendations. Following this approach, this document presents the recommendations of the Belgian PREZODE Network for a national One World One Health vision towards the prevention of zoonotic disease emergence. These are the results of two workshops in March and June 2023 where the expert community called for a 'deep prevention' approach (prevention at source) focusing on foresight and anticipation.

The One World One Health approach, also called One Health, is gaining momentum, not just in Belgium and Europe, but also globally[1]. It is an integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals and ecosystems. It recognizes that the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and interdependent. The approach mobilises multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate change, and contributing to sustainable development[2].

In 2022, the Extended Interministerial Conference for the Environment (UICL-CIEE) established the Belgian PREZODE[3] Network (PREventing ZOonotic Disease Emergence), after Belgium signed the PREZODE international initiative in October 2021. The network is composed of representatives from public administrations, authorities and scientific research institutions mandated to contribute to this international initiative on behalf of Belgium. It is also open to non-public institutions, such as scientific research centres, universities, non-governmental organisations (NGOs) or companies.

The mandate of the Belgian PREZODE Network includes following tasks at national level:

- mapping actors active in zoonoses prevention in Belgium and globally
- identifying projects and administrative, political and scientific initiatives contributing to the prevention and control of new zoonotic outbreaks
- providing a One World One Health vision supporting the PREZODE initiative
- proposing a single general structure supporting the prevention and control of zoonoses, back to back with the Risk Assessment Group – Veterinary – Emerging Zoonoses (RAG-V-EZ)[4].

1. *G20 Summit 2023 : https://www.g20.org/en/g20-india-2023/new-delhi-summit/.*
2. *The One Health definition developed by the One Health High Level Expert Panel (OHHLEP): https://www.who.int.*
3. *https://prezode.org/*
4. *https://www.favv-afsca.be/professionelen/dierlijkeproductie/ragvez/ or https://www.favv-afsca.be/professionnels/productionanimale/ragvez/*

STATE OF PLAY

In Belgium and in the European Union, various regulatory frameworks are in place to monitor public health, animal health[5], plant health[6], food and feed safety, and the quality of the environment[7] (air, soil, water and biodiversity, including wildlife health). They provide a solid basis to help reduce zoonotic risks, including antimicrobial resistance (AMR), albeit in a fragmented way due to the division of competencies between the Federal authority, the Communities and the Regions[8].

These official monitoring systems are usefully complemented by pilot studies or research projects initiated by universities, animal health associations, NGOs or through citizen science (e.g. for the passive surveillance of mosquitoes, ticks or invasive alien species, and for disease monitoring like avian influenza in wild birds).

These monitoring systems generate information on (re)-emerging pathogens, their origins, their vectors[9] and reservoirs[10], their occurrence, their introduction and possible spread. The data and knowledge generated by these systems help public authorities to make science-based decisions on how to address the risks, to set priorities, and to decide on practical measures such as isolating animals, taking products off the market or closing trade and borders. However, data related to zoonotic diseases (with the exception of food-borne zoonoses) in Belgium are rather heterogeneous in terms of surveillance systems and their owners, objectives (preparedness and response vs. foresight and/or prevention), frequency of collection, scope, funding and methodology, which hampers their compilation and comparison and therefore, the One World One Health synergy across sectors.

While coordination within and across sectors is initiated, like the Risk Assessment Group - Veterinary - Emerging Zoonoses (RAG-V-EZ), there is currently no comprehensive and multidisciplinary structural One World One Health framework at Belgian level to identify and assess zoonotic risks emancipating from the different sectors. Such frameworks already exist in other countries like in the Netherlands with the Dutch Signalling Forum Zoonoses[11] or in the United Kingdom with the Human Animal Infections and Risk Surveillance group (HAIRS)[12].

5. *Regulation (EU) 2016/429, so-called 'Animal Health Law'-AHL, is the consolidated legislative framework at European Union level to control the spread of animal diseases.*
6. *Regulation 2016/2031 on protective measures against plant pests, so-called 'Plant Health Law', increases the prevention against the introduction of new pests via imports from third countries.*
7. *The EU environmental policy is organised around more than 200 legal acts, including some specifically designed to control the trade and import of exotic animals such as Council Regulation (EC) n° 338/97 on the protection of species of wild fauna and flora by regulating the trade therein or regulation (EU) 1143/2014 (the CITES Regulation) or Regulation N°1143/2014 on the prevention and management of the introduction and spread of invasive alien species (the IAS Regulation).*
8. *Federal authority deals with animal health, public health, plant health, scientific research and environment at the borders and in the North Sea while Communities are competent for public health and scientific research and Regions for the quality of the environment, including the health of wild animals and scientific research.*
9. *A vector is an insect or any living carrier that transports an infectious agent from an infected individual to a susceptible individual or its food or immediate surroundings. The organism may or may not pass through a development cycle within the vector any agent that carries and transmits parasites and diseases like mosquitoes. A reservoir host is a host that harbours the pathogen and serves as a source of the infective agent that it transmits to a potential host. (https://www.woah.org/fileadmin/Home/eng/Health_standards/tahc/current/glossaire.pdf).*
10. *A reservoir of infection is best defined as an ecological system in which the infectious agent survives indefinitely. Where a vertebrate host or group of hosts is essential to such a system, these are termed the reservoir host(s). (https://biblio.naturalsciences.be/associated_publications/bjz/127-1-supplement/bjz-127-sup-1997-p85-90.pdf).*
11. *https://rivm.nl/en/one-health/dutch-signalling-forum-zoonoses.*
12. *https://www.gov.uk/government/groups/human-animal-infections-and-risk-surveillance-group.*

KEY RECOMMENDATIONS

1. Establish a comprehensive, cross-cutting One World One Health governance at Belgian level, to support proactive and integrated preventive measures to zoonotic disease emergence, based on deep prevention

A One World One Health governance for the prevention and reduction of zoonotic risks has to be established at Belgian level. It should encompass, in an equal way, all relevant actors involved in public health, animal health (food production animals, companion animals and wildlife), food safety, plant health and the environment (including biodiversity and climate change). The involvement of all competent authority levels and an improved political coordination will translate into more transparent and consistent evidence-based policies.

The governance must be based on **deep prevention** which means that Belgium should focus on making **prevention at source the key approach** to managing zoonoses-related health risks. Until now, the focus has mainly been put on the prevention of the spread of zoonotic disease once arisen but not on the source of the emergence of the zoonotic disease. An upstream approach implies that any relevant decision-making takes into account environmental degradation and its drivers such as wildlife trade, biological invasions, deforestation and forest degradation, soil artifiialisation and climate change. For instance, Belgium must integrate and promote sustainable production and consumption patterns to help alleviate the pressure on ecosystems globally.

Practically, **the governance must develop, manage and implement real-time communication, collaboration, coordination, and capacity-building between all relevant authorities and stakeholders**. It must be user-friendly and may take the form of a knowledge centre, a common platform, and/or a website. This would centralise and manage a repository of data, metadata and knowledge collected from the multiple monitoring systems, taking into account the FAIR data principles so that data are Findable, Accessible, Interoperable and Reusable.

With a view to setting up the governance, a preliminary mapping of the relevant Belgian institutions and actors working on zoonoses and antimicrobial resistance (AMR) is required, including the expertise on the impacts of changes in biodiversity and climate change on zoonotic spillover as well as the Belgian expertise in tropical ecosystems and global south. This living database of actors, including private and public funders, and their relevant activities, will be a necessary tool enabling real-time and long-term coordination on health risks related to zoonoses.

2. Elaborate a comprehensive and cross-sectoral national action plan to implement the One World One Health approach on the prevention of zoonotic risks

A national action plan is needed to implement the One World One Health approach on the prevention of zoonotic risks and help **foster collaboration, communication, education and synergies between all actors, including the private sector and citizens.** This plan has to take into account existing best practices and existing initiatives and ensure that measures taken are coherent, not duplicative and mutually supportive.

It should improve national and supra-national coordination and rapid exchange of information such as incidents, protocols, actions taken and (meta)data produced by public authorities and other initiatives such as private labs. This implies the availability of a **robust open-access data system (FAIR)** comprising clinical data, phenotypic results, and data of genomic sequences allowing the detection of cross-sectoral diseases. The data system needs to be **built on existing initiatives** (surveillance systems, research, protocols, etc.) of international and European institutions such as the World Health Organization (WHO), the World Organization for Animal health (WOAH), the Food and Agriculture Organization (FAO), the European Centre for Disease Prevention and Control (ECDC), the European Environmental Agency (EEA), the UN Environment Programme (UNEP), the European Food Safety Authority (EFSA) and the European Chemicals Agency (ECHA), with which collaboration is to be reinforced.

The action plan also needs to provide easily accessible **education programmes** and **communication strategies and tools** for a variety of stakeholders: the public at large, the relevant scientific community, public authorities, policy makers and politicians, the medical sector and the private sector (veterinarians, farmers, forest industry workers, hunters, tourists, recreational animal owners, etc.). Through **targeted risk communication**, stakeholders and citizens need to be made better aware of the risks their professional and private or recreational activities entail to biodiversity, animal health and human health.

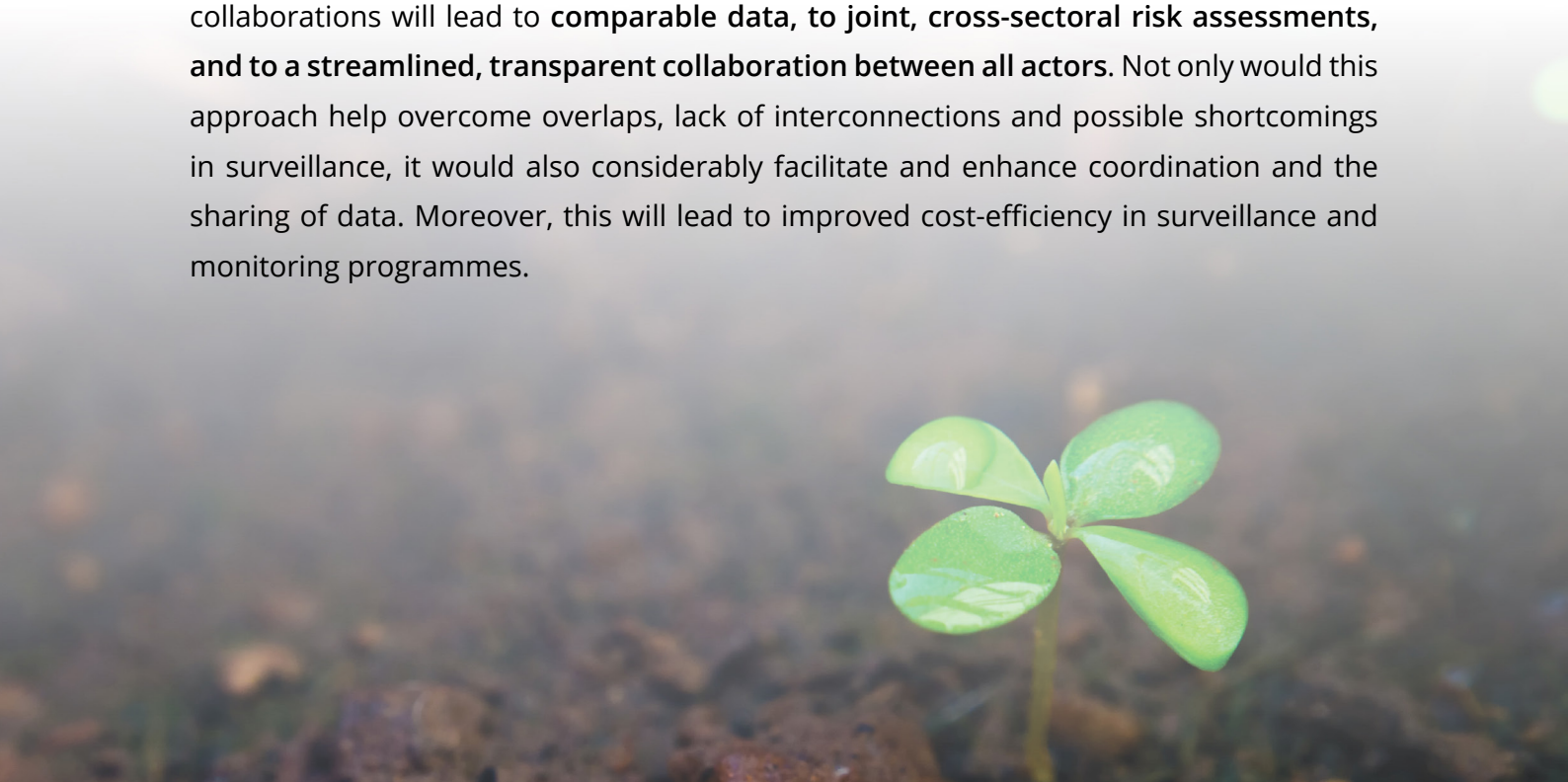
KEY RECOMMENDATIONS

3. Establish and promote integrated, aligned and complementary monitoring and surveillance programmes through harmonised methodologies and cross-sectoral collaborations, supported by appropriate public funding

Surveillance and monitoring programmes in public health, animal health and wildlife are well established and should be kept running. Their effectiveness will be improved by adding a significant preventative approach that allows for anticipation alongside the response to an outbreak. This will enable creating evidence-based foresight and the adoption of precautionary measures in line with deep prevention. Indeed, the two paradigms (rapid reaction and deep prevention) are complementary and mutually synergistic. Surveillance systems enabling the early response and control of emerging zoonoses can fuel our understanding of the patterns and deep structures generating the risk. Such an approach needs to be taken across different sectors and systems **to make them more aligned and interoperable.**

Early Warning and Response Systems (EWRS) and diagnostic capacity are to be extended to cover a broader range of pathogens (including those unknown, where appropriate), and more emphasis should be put on human beings as sentinel (e.g. veterinarians, animal breeders and wildlife rescue staff), wildlife and environmental surveillance such as pollution, including the use of eDNA and other novel approaches. Moreover, a **structurally integrated surveillance system** of zoonotic risks with **long-term integrated funding** should be created at national level.

Such integrated, complementary and aligned monitoring and cross-sectoral collaborations will lead to **comparable data, to joint, cross-sectoral risk assessments, and to a streamlined, transparent collaboration between all actors.** Not only would this approach help overcome overlaps, lack of interconnections and possible shortcomings in surveillance, it would also considerably facilitate and enhance coordination and the sharing of data. Moreover, this will lead to improved cost-efficiency in surveillance and monitoring programmes.



KEY RECOMMENDATIONS

4. Provide funding opportunities for One World One Health scientific research into preventing the emergence of zoonoses at national and international levels, facilitating coordination for multidisciplinary projects and enabling targeted scientific research

More long-term funding and more coordination between funding initiatives are needed to enable aligned research, avoid duplication, and further develop innovative methods at national and European levels in a One World One Health perspective. Additionally, **specific funding opportunities for projects focused on a specific research topic** such as studies on pathogens in bats need to be created and promoted.

In Belgium, funding is currently fragmented between the different institutional levels (federal, regional and communities), and between their respective competencies (human health, animal health, agriculture, environment, basic and applied research). Consequently, it is often difficult to obtain the necessary funding for multidisciplinary projects. This fragmentation is also reflected at European and international level. To overcome the above-mentioned obstacles, **Belgium needs to join the PREZODE Fund** which is the first example of coordinated One Health research funding at international level.

At national level, **innovative and cross-regional funding tools** are needed in order to increase the critical mass of ideas and solutions that are to be widely applicable and harmonised. To implement a deep prevention strategy and avoid the emergence of zoonotic risks at source, it is essential to **strongly financially support Research and Innovation activities** on best prevention and surveillance practices. This will efficiently address knowledge gaps and will generate new evidence for preventing zoonotic risks.

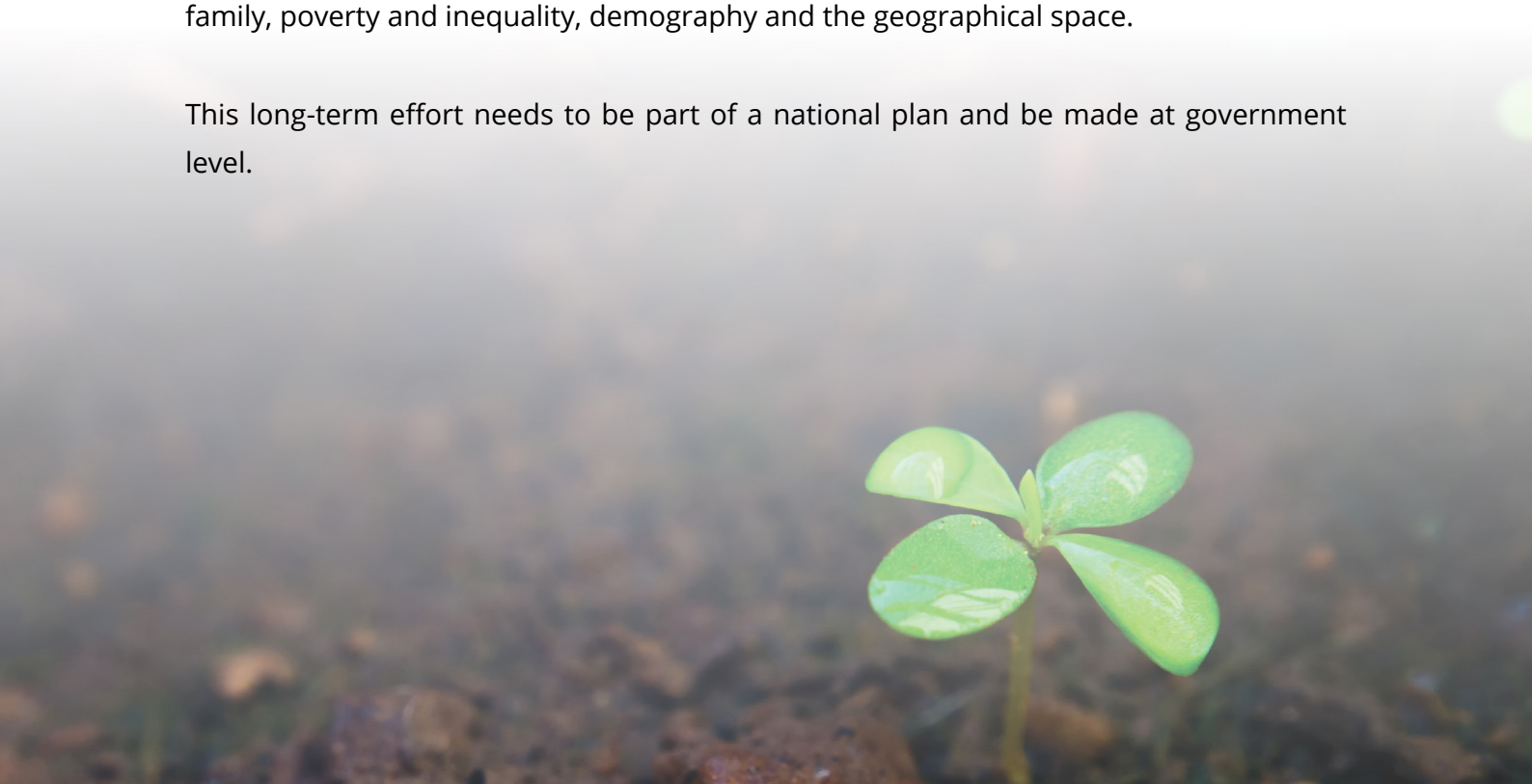
KEY RECOMMENDATIONS

5. Develop a One World One Health socio-educative programme related to the prevention of zoonotic disease emergence in a view to inducing a long-term behaviour change in society

IIt is critical to implement a **long-term paradigm shift at the level of society.** This will require public authorities, at all levels, to adapt their decision-making process. They need to establish a new institutional culture based on the One World One Health approach with regular multidisciplinary coordination processes between competencies and ministries. Other actors of society such as academics, scientific researchers or professionals in various sectors must also contribute to this change by adapting their own structures and ways of thinking. Citizens, and especially the future generations, play a key role in the long-term functioning of our societies. They should be mobilised at local, regional and national levels with appropriate socio-educative programmes going beyond mere information on selected pathogens or disease risks. The government response needs to include initiatives that empower citizens through education, knowledge acquisition and skills allowing them to make informed choices in line with their well-being and a sustainable future for our society.

The change in behaviour and in existing structures depends on socio-economic factors. Regarding citizens it is essential to add a social-economic dimension when designing a strategy to prevent the emergence of zoonotic risks. Cultural beliefs and habits are often rooted in traditions that are difficult to change. They need to be addressed in an appropriate way with a community-based approach. Such a strategy would include components such as social classes, urban distribution, culture, heritage and societies, family, poverty and inequality, demography and the geographical space.

This long-term effort needs to be part of a national plan and be made at government level.



KEY RECOMMENDATIONS

6. Provide more support for, and learn from countries with a higher risk for the emergence of zoonotic diseases and assist the global community in protecting high-integrity ecosystems to reduce risks of future pandemics of zoonotic origins

The Declaration of the Seventh Ministerial Conference on Environment and Health, Budapest, Hungary, 5–7 July 2023, recognises that 'maintaining the integrity of natural ecosystems is critical in preventing zoonotic and vector-borne diseases, and pandemics'. Belgium should therefore engage its diplomatic channels **and work with partner governments to support and assist the global community in protecting high-integrity ecosystem**s, as well as in ending the commercial trade in wildlife for human consumption or other use, in line with the European Parliament Resolution on 'COVID-19 Pandemic: Lessons Learned and Recommendations for the Future'.

In this respect, Belgium must endeavour to stimulate **transparency, accountability, and meaningful participation of underrepresented populations and their representative organisations** such as Indigenous people and local communities (IPLCs). Belgium should also advocate and allow for **appropriate funding to support the development of One World One Health research projects and programmes in the Global South**, considering the geographical distribution of (re)emerging zoonotic diseases and their spread in a globalized world. In this vein, it is crucial to **strengthen Health Systems globally** with a special emphasis on the role of the health workforce as a key driver for prevention to zoonosis.

Belgium also needs to support a One World One Health approach on zoonotic risks, and in particular **pandemic prevention at source, at supra-national level by advocating its integration into relevant policies, legislations, and international instruments**, in particular under the World Health Organization (WHO), World Organisation for Animal Health (WOAH), Food and Agriculture Organization (FAO), and the UN Environment Programme (UNEP), as well as improve One World One Health-related communication with other Member States and countries.

KEY RECOMMENDATIONS

7. Voice the One World One Health approach at European and international levels and advocate its integration into relevant policies

A **mapping of international and European relevant political commitments, legal obligations and research projects aiming to prevent zoonotic risks** will help Belgium to get a clear view of potential synergies and the areas where it could better advocate and reinforce the One World One Health approach. Through a dedicated roadmap, Belgium is to establish a strategy to achieve the integration of the One World One Health approach into relevant international and European policies. This would include the development of appropriate tools and metrics that would allow **measuring the socio-economic impacts** of actions aiming at zoonotic risk reduction globally and nationally, as well as the **benefits** for human health, biodiversity and animal health.

At European level, Belgium should **give an impulse to actions** such as encouraging the development of guidelines (e.g. for national action plans) or extending current initiatives towards a comprehensive One World One Health approach (e.g. expanding coordination for pandemic prevention and preparedness under HERA to the surveillance of zoonotic diseases). Continued collaboration with other Member States through the **promotion of, and the involvement in European Union** projects such as the EU Partnership on Animal Health & Welfare, the EU Partnership on Pandemic Preparedness, and relevant HERA-supported research projects, will allow for better cross-border communication and cooperation.

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REFERENCES

- Global Health Centre Policy Brief – Pandemics through a One Health approach: what role for a pandemic instrument? (Le Moli et al., 2022)
- PREZODE – Preventing Zoonotic Disease Emergence – Strategic Agenda V.1.0 (Lounnas et al., 2022) https://prezode.org/content/download/3922/38001/version/1/file/PREZODE_Strategic_Agenda.pdf
- Declaration of the Seventh Ministerial Conference on Environment and Health: Budapest, Hungary 5–7 July 2023
- European Parliament Resolution of 12 July 2023 on the COVID-19 Pandemic: Lessons Learned and Recommendations for the Future
- Evans, T., Olson, S., Watson, J., Gruetzmacher, K., Pruvot, M., Jupiter, S., Wang, S., Clements, T., and Jung, K., 2020. Links between ecological integrity, emerging infectious diseases originating from wildlife, and other aspects of human health - an overview of the literature. Wildlife Conservation Society, 4, p.e303
- Gallo-Cajiao, E., Lieberman, S., Dolšak, N., Prakash, A., Labonté, R., Biggs, D., Franklin, C., Morrisson, TH., Viens, AM., Fuller, RA., Aguiar, R., Fidelman, P., Watson, JEM, Anishanslin, C., Wiktorowicz, M., Global governance for pandemic prevention and the wildlife trade. Lancet Planet health, 2023
- Gruetzmacher, K., Karesh, W.B., Amuasi, J.H., Arshad, A., Farlow, A., Gabrysch, S., Jetzkowitz, J., Lieberman, S., Palmer, C., Winkler, A.S. and Walzer, C., 2021. The Berlin principles on One Health – Bridging global health and conservation. Science of the Total Environment, 764, p.142919
- Najberek, K., Olszanska, A., Tokarska-Guzik, B., Mazurska, K., Dajdok, Z., Solarz, W., Invasive alien species as reservoirs for pathogens, Ecological indicators, Volume 139, 2022
- Vinuales,J., Moon, S., Le Moli, G., Burci, G-L., A global pandemic treaty should aim for deep prevention, The Lancet; Volume 397, Issue 10287, 2021

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