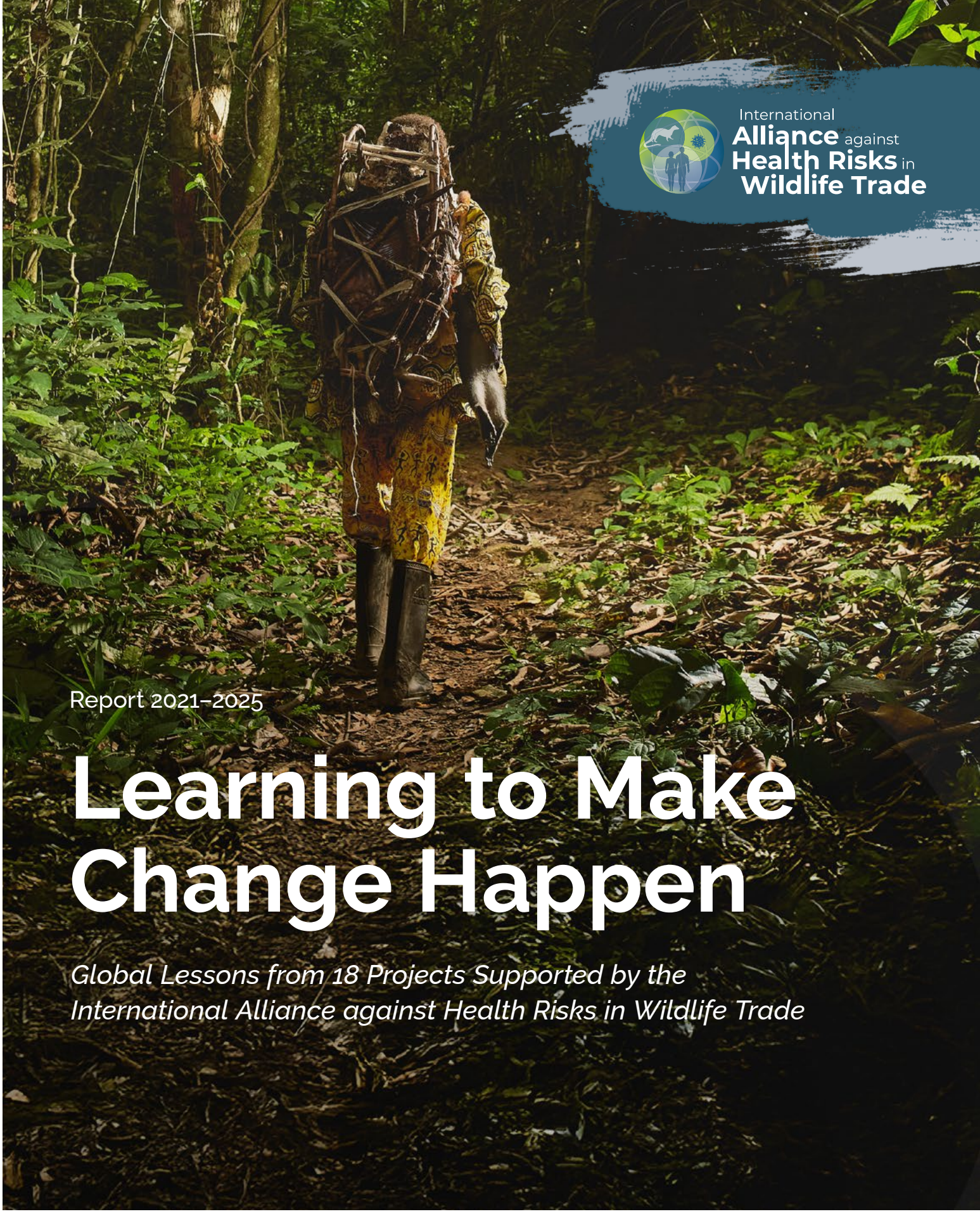

International Alliance against Health Risks in Wildlife Trade

Report 2021–2025

Learning to Make Change Happen

Global Lessons from 18 Projects Supported by the International Alliance against Health Risks in Wildlife Trade

Initiated by:

Federal Ministry for Economic Cooperation and Development

Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety

Implemented by:

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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A hunter from the Zoulabot community carries hunted wildlife in his *kinga* — a traditional backpack woven from rattan, that is commonly used in this region of Cameroon by hunters to carry game. Recognising the potential health risks associated with direct contact with animal blood, the Center for International Forestry Research — World Agroforestry (CIFOR-ICRAF) launched a community-led kinga design contest. The goal was to create improved kingas that offer better hygiene and safety, helping protect hunters from pathogens and reducing the risk of disease spillover.

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Table of Abbreviations

ASEAN	Association of South-East Asian Nations
BMUKN	German Federal Ministry for the Environment, Climate Action, Nature Conservation and Nuclear Safety
BMZ	Federal Ministry for Economic Cooperation and Development
CBD	Convention on Biological Diversity
CIFOR-ICRAF	Center for International Forestry Research — World Agroforestry
CIH	Center for International Health (by LMU)
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DRC	Democratic Republic of the Congo
FAO	Food and Agriculture Organisation of the United Nations
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
The ICCF Group	International Conservation Caucus Foundation
IFC	International Finance Corporation
IUCN	International Union for Conservation of Nature
LMU	Ludwig Maximilian University of Munich
NABU International	The Nature and Biodiversity Conservation Union International Nature Conservation Foundation
NBSAP	National Biodiversity and Action Plan
NGO	Non-governmental Organisations
OHHLEP	One Health High Level Panel of Experts
Quadripartite	Collectively, FAO, UNEP, WHO, and WOAH
SDG	Sustainable Development Goals
UN	United Nations
UNEP	United Nations Environment Programme
UNODC	United Nations Office on Drugs and Crime
WCS	Wildlife Conservation Society
WHO	World Health Organisation
WOAH	World Organisation for Animal Health
WWF	World Wide Fund For Nature

Foreword

We are at a pivotal moment in recognising and addressing the health risks associated with wildlife trade. Despite the well-documented impacts on public health, economic, and ecosystems, zoonotic risks from wildlife trade remain underrepresented in global pandemic prevention strategies. Strengthening primary prevention at the source is essential if we are to break the cycle of crisis-driven responses and build a more resilient, equitable, and sustainable future. As the world advances efforts to prevent pandemics and conserve biodiversity, including negotiations under the Pandemic Agreement and the implementation of the Kunming-Montreal Global Biodiversity Framework, the urgency to integrate targeted action on wildlife trade into global health security, biodiversity conservation, and sustainable development has never been greater.

This report from the International Alliance against Health Risks in Wildlife Trade marks a critical step forward in this effort. It showcases 18 transdisciplinary projects across Africa, the Americas, and Asia, each offering practical, science-driven solutions to reduce zoonotic risk, strengthen policy frameworks, and drive behavioural change. In addition to highlighting gaps, synergies, and opportunities in addressing the health risks of wildlife trade, these projects demonstrate the transformative power of collaboration. They underscore the importance of enabling systems that empower local communities, strengthen government capacity, and support nature-based solutions, to achieve the shared health of humans, animals, and ecosystems.

The work presented in this report reaffirms a fundamental truth: pandemic prevention, biodiversity conservation, and sustainable development are deeply interconnected. Wildlife trade-associated health must be fully integrated into global health governance, not just as a conservation priority but as an essential pillar of global health security. By bridging knowledge, practice, and policy, this report serves as both a call to action and a roadmap, offering scalable, evidence-based interventions to guide decision-makers toward a healthier, more resilient world for all species.

We extend our deepest appreciation to the project teams, partners, and stakeholders who have contributed to this important work and to the Alliance members whose commitment to collaboration and innovation is driving real change on the ground. Working together, we have the hope for a future where people, animals, and ecosystems live in balance — healthy, thriving, and protected for generations to come.

Hongying Li

Dr. Hongying Li

Senior Program Manager,
Engagement and Impact, Columbia Climate School;
member of the Alliance Steering Committee

Executive Summary

This report draws lessons from 18 diverse global, sub-regional, national, and local projects addressing health risks of wildlife trade. These projects were financed by the *Alliance against Health Risks in Wildlife Trade*, spanned Africa, the Americas, and Asia and were centred around three themes: pathogen discovery, social and behaviour sciences, and law and regulation. By supporting these projects, the Alliance helped to shift the global approach to health risks in wildlife trade from crisis response to proactive prevention, ensuring that health in wildlife trade is part of the global health security agenda.

Lessons learned from the projects

The projects show how wildlife health can be integrated with health security and conservation through practical, scalable and locally relevant risk management. They offer insights not only into what could be done, but also how it could be achieved. They show how learning through actions that integrate science, community, management, and policy can help move us towards safer circumstances.

Many agencies and organisations are calling for greater pathogen surveillance to prevent pathogen spillover from wildlife. Projects working in this area re-enforced the need for systems thinking and showed that although technological advances aid in pathogen detection, this alone is not enough to move communities and the world to greater safety. Local goodwill, interest, and capacity to act are equally critical. Engaging local knowledge, recognising cultural values, and seeking opportunities that fit local needs are key to disrupting spillover points in the supply chain.

Pandemic prevention depends on the decisions people make and the actions they take. Social and behaviour science projects showed that successful risk management interventions require a holistic understanding of making people aware of the need for change, understanding the interplay of their values, knowledge, and practices. Strategies to move knowledge into action require an understanding of people's attitudes toward the desired changes, the views of the community and respected figures, and people's perceptions of their ability to act.

Laws and regulations provided the authority, spending power, and capacity to turn legislative intentions into on-the-ground change. Projects focused on this theme helped to get wildlife trade into policy agendas by building relationships among stakeholders and creating channels for knowledge exchange to help set policy priorities. Other projects helped to establish cross-sectoral policy options or focused on building capacity needed to understand, create and implement new policy frameworks. Given the global implications of disease spillovers in wildlife trade, efforts to harmonise and standardise guidelines and regulations helped to promote risk reduction that is consistent globally but nationally adaptable.

Most projects faced challenges to implementing their activities — some common to many collaborative risk management efforts, others unique to wildlife trade. New governance mechanisms, investment in trust and relationship building, and the development of locally relevant expertise have been proposed to address these challenges. Efforts to speed up and sustain risk reduction in wildlife trade need to be attentive to such common operational impediments. Collaborations that involve different ways of knowing, including local knowledge and perspectives, are paramount in any strategy to advance risk reduction when confronted with these unique challenges. No single discipline can overcome these barriers alone.

Shared lessons

These projects show that progress occurs when organisations switch from being the one to provide the single, right solution to working with others to develop a collective view of possible incremental solutions. The ability to collaborate across boundaries, engage stakeholders and citizens in understanding the problem and identifying solutions, engage in big picture thinking, understand behavioural change, have a shared vision, and accept uncertainty were often even more important than having perfect scientific data when aiming to move us to safer circumstances. Strategies that enhance and sustain integration of social, environmental, and biomedical sciences are critical for effective, holistic risk management.

Conclusion

No two wildlife trade chains are the same. Risks within the trade are, therefore, local events needing local solutions. However, there is power in sharing local experiences. Leveraging lessons learned from other situations can help speed the design and adoption of best practices to local situations. Organisations such as the Alliance can help assess, reinforce, and amplify locally developed innovations and facilitate their diffusion and adaption to other settings. The 18 projects summarised in this report are testimony to the fact that effective, locally relevant small-scale projects can teach us much.

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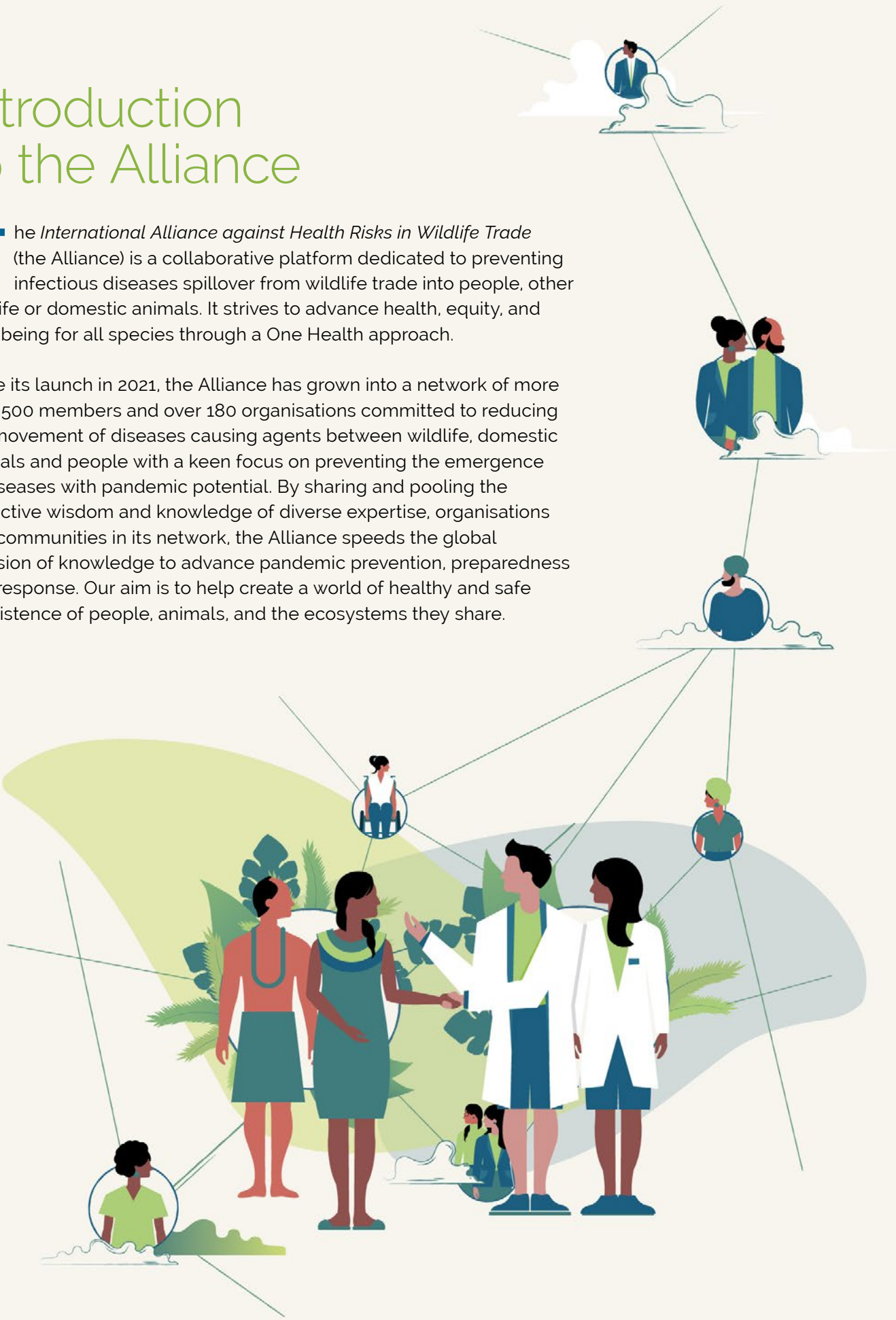
In a Nutshell — Short Profiles of 18 Projects Supported by the International Alliance against Health Risks in Wildlife Trade

1.

Introduction to the Alliance

The *International Alliance against Health Risks in Wildlife Trade* (the Alliance) is a collaborative platform dedicated to preventing infectious diseases spillover from wildlife trade into people, other wildlife or domestic animals. It strives to advance health, equity, and well-being for all species through a One Health approach.

Since its launch in 2021, the Alliance has grown into a network of more than 500 members and over 180 organisations committed to reducing the movement of diseases causing agents between wildlife, domestic animals and people with a keen focus on preventing the emergence of diseases with pandemic potential. By sharing and pooling the collective wisdom and knowledge of diverse expertise, organisations and communities in its network, the Alliance speeds the global diffusion of knowledge to advance pandemic prevention, preparedness and response. Our aim is to help create a world of healthy and safe coexistence of people, animals, and the ecosystems they share.



2.

Purpose of the Report

This report showcases pathways to risk reduction revealed through the experiences and lessons learned in 18 innovative projects financed by the Alliance. These projects show how wildlife health can be integrated with global health security and conservation through practical, scalable and locally relevant collective action for risk management. Drawing directly from lessons learned from these projects, this report outlines some concrete intervention opportunities to drive meaningful action. It highlights successful models of cross-sector collaboration, where public health experts, conservationists, and local communities work together to confront disease risk, strengthen governance, and promote risk reducing behaviours. These real-world examples offer a proof-of-concept for scaling solutions and demonstrate how strategic investments can fill policy gaps and create systemic change.

By supporting these projects, the Alliance is helping shift the global approach to health risks linked to wildlife trade from crisis response to proactive prevention, ensuring that health in wildlife trade is recognised as an important part of global health security.

Background Issues Driving the 18 Projects

Health Risks in Wildlife Trade are Complex, so too are their Solutions

Wildlife is not one "thing". It is a collective term for thousands of species in thousands of circumstances used in hundreds of ways by people with highly variable needs and capacities. The wildlife trade involves a vast diversity of species, locations, communities and products (Figure 1). It is a complex adaptive supply chain built upon many interacting, interdependent and changing actors that are embedded in diverse socio-ecological systems, along with numerous regulations that span several scales and change over time. It includes legal and illegal activities and players.

Millions of tons of wildlife are consumed each year, worldwide. Africa, Asia, and the Americas host many species and practices at the source of wildlife consumption and trade (Olival, et al., 2017). Europe is a hotspot for exotic animal trade. Some estimates suggest that 25 percent of all terrestrial bird, mammal, amphibian, and squamate reptile species are included in wildlife hunting and trade (Scheffers et al., 2019). This multi-billion-dollar global business involving a diverse range of products, people, and places from small-scale local harvesters to major profit-oriented business, to organised crime.

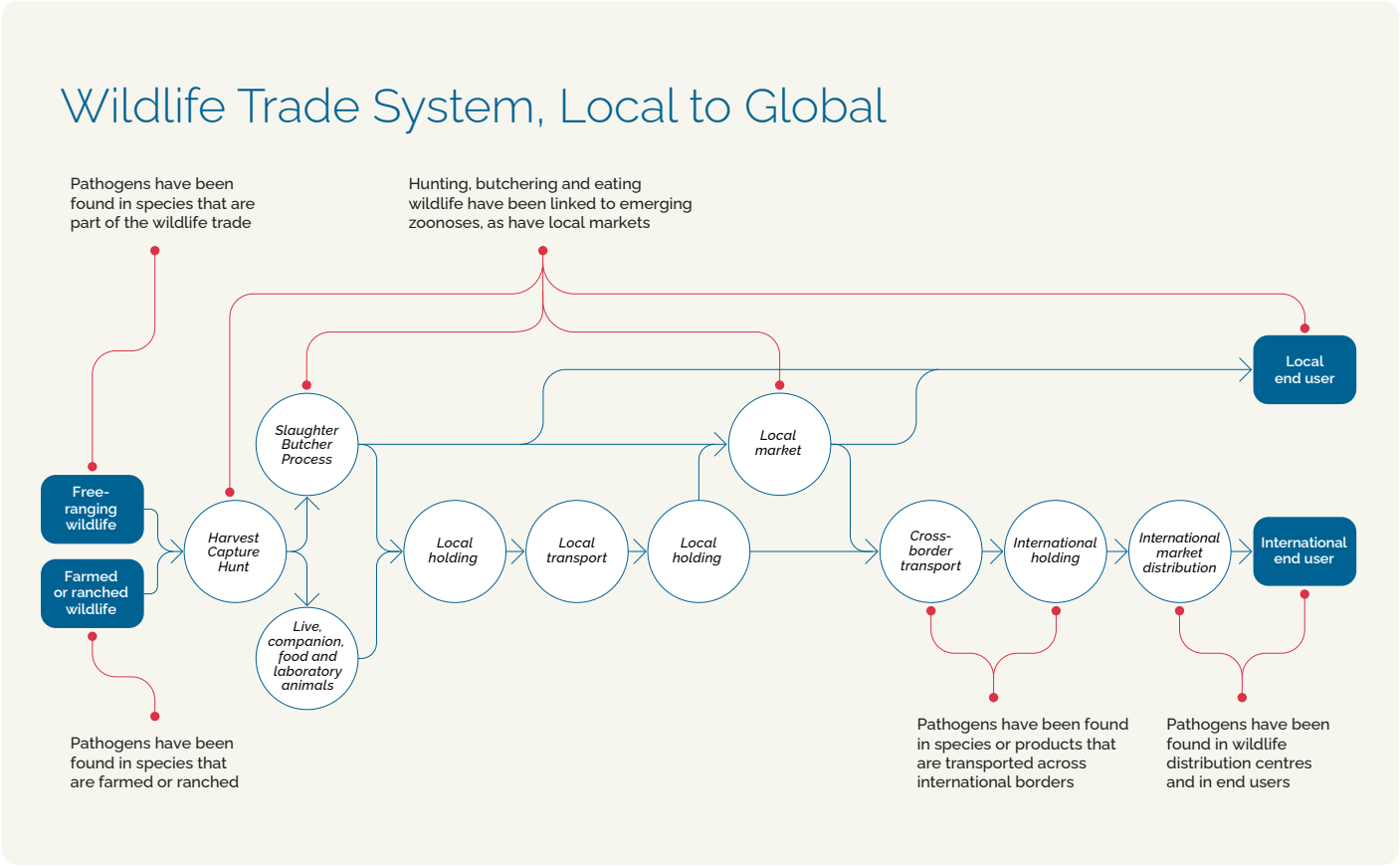
Trade in wildlife introduces health risks at the animal-human interface along the supply chain, from collection to consumption to husbandry. Health risks may arise from the use of wildlife products and with live wildlife that are hunted, captured, transported, held, and slaughtered (WOAH, 2024). The global impacts on the fabric of societies and economies from diseases of wildlife origin were tragically revealed by the COVID-19 pandemic which echoed lessons learned from other pandemics and epidemics linked to wild animals such as AIDS, avian influenza and Ebola.

The use of wild species "*directly contributes to the well-being of billions of people globally on a day-to-day basis and is particularly important to people in vulnerable situations*" (IPBES, 2022). Wild animals provide food, income, and inspiration to communities and cultural traditions. They play key roles in the integrity of ecosystems. For instance, pollinator insects, bats, and birds are critical to the healthy growth of forests and food crops. Insects, bats, birds, reptiles, and amphibians consume billions of pests that spread diseases affecting us, our crops and our animals. Wild animal species are critical to shaping and maintaining the ecosystems upon which we all depend (Nasi et al., 2011). However, the use of wildlife threatens these invaluable contributions. Extraction of organisms from wild spaces is the second largest driver of biodiversity loss (IPBES, 2019). Biodiversity loss from overconsumption of wildlife, therefore, has local and global implications.

Different types of risks can emerge because of diseases risk mitigation actions. For example, regulations on live animal markets may lead to environmental injustice for those reliant on wildlife trade (Callum and Woolaston, 2022), leading to negative impacts on a range of social determinants of health. Millions of people depend on the dietary protein and income derived from hunted, fished or trapped wildlife every year. Short-medium- and long-term impacts on local food traditions, food security, and protein malnutrition can occur if interventions do not consider the benefits of wildlife use while trying to remedy infectious disease risk.

Balancing the various interacting threats and benefits linked to wildlife trade can make risk reduction challenging. Risk management of this complex, dynamic trade requires understanding of how the social and environmental circumstances interact, influence, modify, facilitate, or constrain risk reduction interventions and their implementation (May et al. 2016).

Figure 1. Illustration of the Wildlife Trade Chain, Tracing Its Path from Local Sources to Global Implications



(adapted from WOAH, 2024)

Existing studies and experiences make it clear that something must be done to reduce risks but are less clear on how to get it done. The growing pressures on wildlife, complexity of wildlife trade issues and prevailing uncertainties and ambiguities demand a learning-based approach to wildlife health management. The 18 cases synthesised in this report provide some lessons into not just what could be done, but also how they could be accomplished.

Evolving Gaps Between Expectations and Implementation

In the shadow of COVID-19, there is growing political and scientific urgency to manage health risks associate with wildlife trade. A growing set of declarations have asserted that protecting and restoring biodiversity and ecosystems is a prerequisite to the health of people, animals, and ecosystems which in turn underpin sustainable development. Organisations like the United Nations Environment Program (UNEP), World Health Organisation (WHO), World Animal Health Organisation (WOAH) and others are seeing the value of sustainable conservation as a health asset and as a primary way to dampen or prevent global health threats such as viral pandemics. Others, including the WOAH, International Union for the Conservation of Nature (IUCN) and Convention on Biological Diversity (CBD), are recognising that health is an integral part of wildlife conservation.

Experiences suggest that a reduction in wildlife trade can reduce opportunities for disease causing agents to move from wildlife to people or domestic animals. It is, however, unlikely that all of the many forms of wildlife trade will be eliminated in the foreseeable future. International and national agencies are calling for innovations to improve how we anticipate and prepare for emerging, spreading, and interacting health risks in the trade. There is a desire to treat wildlife trade like domestic animal agriculture but there are important differences in how surveillance, diagnostics and disease management can be accomplished in wildlife compared to domestic animals.

There are significant gaps between these expectations and the reality of wildlife trade risk reduction in practice. For example, more than half of health security reports for over 100 countries and territories did not provide evidence of a functional wildlife health surveillance programme and only eight of all pre-2021 national biodiversity strategies and actions plans (NBSAPs) reported activities related to wildlife health or zoonotic disease (Machalaba et al., 2021). According to two global analyses (Machalaba et al., 2021 and Zinsstag et al., 2023), no effective mechanism currently exists for early detection of emergent pathogen spillover from wildlife. Coordination throughout governments and effective allocation of resources are essential for sustainable development, biodiversity conservation, health, food security, and livelihoods (WOAH, 2024). But such coordination remains challenging to obtain. Existing evidence does not point to the most critical control points or effective interventions to predictably reduce the risk of an emerging disease arising in wildlife trade (Stephen et al., 2021).

Risks management cannot wait until all these challenges and uncertainties are eliminated. But neither should actions occur without evidence and experience that they will be helpful. The 18 projects summarised in this report show the value of gaining knowledge and skills through hands-on experiences. They show how learning through actions that integrate science, community, management, and policy can help move us towards safer circumstances and help the world adaptively manage health risks linked to the wildlife trade.

3.

Learning from Doing

Overview of the Projects

The 18 projects represented work in 23 countries in three regions (Africa, Asia, and the Americas) as well as one global initiative. A range of organisations led these initiatives, including United Nations (UN) agencies, environmental non-governmental organisations, universities, and health organisations. All were collaborations that brought together diverse ways of knowing and locally relevant expertise.

The projects addressed different aspects of risk reduction in different circumstances. They could roughly be categorised in three themes: Pathogen Discovery (4 projects), Social & Behaviour Sciences (6 projects), and Law & Regulation (5 projects). Three projects combined fields. One combined Social & Behaviour Sciences and Law & Regulation, and two combined Pathogen Discovery and Law & Regulation.

While each of the 18 projects had a central theme, few restricted themselves to one theme. Making changes on the ground requires diverse information, relationships and actions. These projects show the possibility of not only cross-sectoral collaboration but also multi-faceted actions as the basis to drive change. The Annex provides more details on the projects and partners involved.

INCLUSIVENESS IN ACTION

Human Rights and Gender Equity

Human rights and gender equity are building blocks of acceptable and sustainable risk management practices. The Alliance ensured all its collaborators receiving funds or support through projects or consultations have safeguards that care for human rights, gender equity, conflict management and care for the environment. Alliance projects respect the rights of local communities and aim at consensual participation of community members in their activities.

Overview of Themes, Activities, and Key Contributions from the 18 Projects Supported by the Alliance

Theme	Activities Designed	Projects' Contributions
 Pathogen Discovery	• Knowledge databases and gene banks • Trade chain analyses — exposures and threats • Epidemiological analyses • Policy implementation, best practices	• Improved biodiversity standards for lending banks and private industry • Reform of health indicators on social performance reviews • More than 700 animal samples analysed in Central America • Game meat inspection rules developed • more than 600 animal and meat samples analysed in Central Africa
 Social & Behaviour Sciences	• Training of trainers (fellowships) • Elementary education (storybooks) • Collaboration with religious communities • Cultural or professional behaviour assessment • Education and information networks	• Locally-based education materials • Youth outreach through schools • Values-based communication • Livelihood and lifestyle maps of hygiene and sanitation • Young journalist training
 Social & Behaviour Sciences / Law & Regulation *(hybrid)*	• Interdisciplinary networks	• Conflict and gender sensitive trainings created
 Law & Regulation	• Policy advocacy • Technical standards and guidelines • Legislative analyses and recommendations	• Guidance for national authorities on disease, pathogen, and toxin surveillance • National legal frameworks on addressing zoonoses in wildlife trade • Meat transportation checkpoints • Governance gap analysis of national laws and regulations regarding spillover risks
 Pathogen Discovery / Law & Regulation *(hybrid)*	• Indicators and assessments	• Planning and implementation of new One Health networks

Mapping Global Activities

This world map shows the location of the Alliance-financed projects and their respective outcomes.

For more information on each project, implementing organisation and project title, please see the Annex.

St. Luke's Medical Center

Trained 12 young leaders in One Health, policy, and communication.

OHCC Udayana University

Created ten storybooks (5,000 copies) and seven region-specific podcasts for early-age education.

Dalberg Catalyst

Strengthened cross-sector collaborations; built journalist capacity to enhance One Health media coverage; developed a One Health policy paper and disseminated across multi-stakeholders.

NABU International

Raised awareness through buddhist principles, reaching over 1.8 million people.

EcoHealth Alliance

Empowered local communities by incorporating their knowledge into risk mitigation strategies.

GIZ Vietnam

Strengthened biosecurity laws, clarified roles, and improved national coordination.

WCS China

Reviewed national laws and regulations leading to policy recommendations to mitigate spillover risks.

Goethe University Frankfurt

Launched a One Health task force and an early warning system.

Stichting Wageningen Research

Explored Lagos' wildlife trade to guide wildlife conservation and spillover risk reduction.

UNEP

Generated data for zoonotic disease monitoring in high-risk areas, enabling early detection.

WWF Germany

Provided guidance to decision makers as 69% of sales outlets showed high zoonotic risk.

TRAFFIC International

Supported the introduction of game meat inspection regulation in Tanzania.

Pro Wildlife e.V.

Reached 8.2 million people through a transnational education campaign.

The ICCF Group

Developed a legal tool to assess wildlife trade laws for pandemic prevention.

CIFOR-ICRAF

Conducted a social and behaviour change campaign informed by local surveys on zoonotic risk perception.

Photo © ARCAS / Alejandro Morales

Photo © Goethe University Frankfurt

Pathogen Discovery Themed Projects

Background

There are expectations that the legal wildlife trade should be able to provide assurances of safe movement and use of wild animals and their products. Many agencies and organisations are, therefore, calling for greater pathogen surveillance to prevent pathogen spillover events from wildlife. A 2020 survey of WOAH Member Countries found 99% believed Veterinary Services should be involved in monitoring the wildlife trade supply chain. The Tripartite Guide to Preventing Zoonotic Disease in Countries expects that notifiable zoonotic diseases and events in wildlife are reported to WOAH according to the Terrestrial and Aquatic Animal Health Codes (Tripartite Zoonoses Guide, 2019). A draft Resolution to the CITES 20th meeting of the Conference of the Parties encouraged Parties to undertake actions that would improve monitoring and reduce the risk of pathogen spillover along international wildlife trade supply chains.

Wildlife disease surveillance is increasingly seen as essential for prevention, early detection, and containment of zoonotic epidemics and pandemics (OHHLEP, 2023). Pandemic surveillance is expected to operate more collaboratively, faster and with more complete information than previously imagined (French and Mykhalovskiy, 2013). Unfortunately, a 2021 report concluded that 58%, (62/107) of countries did not provide any evidence of a functional wildlife health surveillance programme (Machalaba et al., 2021). Although some countries routinely conduct wildlife disease surveillance, many others only address disease events in post-outbreak scenarios (Schwind et al., 2014).

Project Overviews

The major target for risk reduction in wildlife trade is the spillover cascade. This cascade is the hierarchy of steps that need to be followed to get a disease-causing agent from an animal in wildlife trade, into another species, like people. This generally involves five steps, (i) a source host of the pathogen must be present; (ii) that host needs to be infected; (iii) the pathogen must be released from the source host into an environment that allows its transmission to a spillover host; (iv) the spillover host must be susceptible to the pathogen; and (v) the spillover host must be exposed to a sufficient quantity of pathogen to become infected (Plowright et al., 2015). Projects focused on this theme sought to increase local knowledge about key parts of this cascade.

Photo © WCS Congo / Clement Kolopp

Photo © CIFOR-ICRAF / Vivan Anongo

Finding the Hazardous Agents

A critical first step to understanding the cascade is to know what diseases causing agents are present in a wildlife trade. This needs to be done in a timely fashion if risk managers want to 'get ahead of the curve' of spillover. A project implemented by CHARITÉ in **Guatemala** improved the chances of early detection of pathogens in the Maya Biosphere Reserve through training diagnosticians and laboratorians on methods for obtaining viable samples and equipping a local wildlife entity to undertake sampling.

Central to the One Health approach to wildlife trade is simultaneously monitoring people and wildlife to better understand how pathogens are shared. However, this is often difficult to implement. The collaborative project from Goethe University Frankfurt looked at the wildlife trade supply chain in **Myanmar** and worked to identify pathogens circulating in wildlife, including prey, predators and arthropods as disease vectors of traded or locally consumed species. They helped put their findings into context by also looking for pathogens in domestic animals and people. Participatory research adapted to conflict and gender dynamics helped the investigators understand relationships between people and animals within the regional wildlife trade. The two projects Goethe University Frankfurt and UNEP specifically collected wildlife serology and serology of humans at the same time, to gain insight into the ecology of some important disease causing agents.

Seeking Places to Disrupt the Cascade

Equally important to finding the pathogen is finding locations in the trade where interventions could disrupt the movement of pathogens from traded wildlife to others. For example, a project in **Nigeria** found that, while hunters, wholesalers and processors had a high exposure risk, empowering women in wild meat contact chain to contribute to conservation and public health policies could lead to more effective and sustainable outcomes. The recognition of women's roles in wild meat harvesting traditions highlighted the importance of cultural and gender determinants of risk management.

Two projects took novel approaches to pathogen assessment that focused on community research with direct benefit to local communities. The Center for International Forestry Research (CIFOR-ICRAF) worked with village hunters to train them to identify signs of infection in wild meat. The project encouraged improved hygiene to reduce risks of disease transmission from both known and unknown pathogens. A World Wide Fund For Nature (WWF) Germany led project looked at the endemic zoonotic risk across local business enterprises utilising bushmeat traders for the benefit of local communities in the **Democratic Republic of the Congo** (DRC). WWF Germany emphasised co-design in the creation of its strategic approach.

Building Capacity to Act

Changing the spillover cascade needs more than new knowledge. It needs investment, capacity and political will to disrupt the cascade. UNEP partnered with WCS in the Republic of Congo to monitor wildlife and human health, establish baselines in areas which are gazetted for future development and assess spillover risks. The inclusion of great apes in International Finance Corporation (IFC) biodiversity standards was leveraged to shape development planning for lending banks and the private sector, assess IFC's performance standards related to health, and initiate discussions on revising existing health indicators. The IFC Performance Standards are used by over 150 organisations, including Equator Principles signatories, export credit agencies, and Development Finance organisations.

Photo © TRAFFIC International

A project in **Tanzania** implemented by TRAFFIC International in collaboration with partners found that, although efforts had been made to improve governance of the game meat trade, significant work was still needed in the areas of capacity building, role clarification, and enforcement before the good intentions behind the new regulations could be realised. This project found that *"bringing district level public health and veterinary health officials together with their wildlife management counterparts to conduct a qualitative disease risk analysis on the game meat industry built multi-sectoral relationships which led to the convening of monthly inter-agency meetings after the officials returned to their districts, thus operationalising a One Health approach".*

SPOTLIGHT ON PATHOGEN DISCOVERY PROJECTS

Advancing Data & Science

Organisation
World Wide Fund For Nature (WWF) Germany

Partner Organisations
Helmholtz Institute for One Health (Greifswald), National pour la Recherche Biomedicale (Kinshasa), WWF DRC, (APPACOL-PRN)

Site Location
Democratic Republic of the Congo (DRC)

Challenge Addressed
Zoonotic transmission risks along the wildlife trade contact chain from national parks to densely populated urban centres

Highlights

The project collected surveys at 159 sales outlets in four spaces (roadside stalls, restaurants, rural markets and urban markets) including 1,288 people involved in wildlife trade and bushmeat sample collection from 656 wild animals found for sale that resulted in precise risk identification by geographic area, livelihood practice, and microbial species.

Key Lessons Learned

Breaking the spillover cascade needs systems thinking. Technological advances that are adaptable to local conditions can effectively identify pathogens and trace their presence throughout the wildlife trade supply chain. But just finding the pathogens is not enough to move communities and the world to greater safety. Even knowing what to do to block the movement of pathogens is not enough if there is no local goodwill, interest, and capacity to act to make the situation safer. Engaging local knowledge, recognising cultural values and seeking local opportunities that fit local needs is key to finding places in the supply chain to disrupt the spillover cascade.

Social & Behaviour Science Themed Projects

Background

Pandemic prevention depends on the decisions people make and the actions they take. Social roles and responsibilities affect who is most at risk for acquiring infections within the wildlife trade and who is best positioned to act on those risks. Much of the investment and attention in pandemic preparedness and prevention has been dominated by biomedical and clinical sciences, most often with insufficient involvement of disciplines that can help to understand how to empower people to adopt risk reducing behaviours. The Alliance, along with other international organisations, recognises that there is a need to fix this imbalance. The WHO Technical Advisory Group on Behavioural Insights and Sciences for Health, for example, strongly advocated for behavioural and social sciences to be included in the impeding international instrument for pandemic prevention, preparedness and response (WHO, 2022). WOAH guidelines for addressing disease risk in wildlife trade also recognise the contribution of social and behavioural information to the design and implementation of risk communication messaging (WOAH, 2024).

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services emphasised the critical role of social sciences in addressing the links between biodiversity loss, disease emergence, and human well-being.

Better inclusion of local actors in pandemic preparedness can bolster national and global health security (Boyce et al., 2022) and social and behaviour sciences can help to understand the local context that enables or impedes implementing effective risk reducing interventions. Managing disease risks in a manner that also increases benefits at the local level is important. Governance structures need to balance between multiple goals (i.e., local food security vs wildlife conservation vs pathogen spillover prevention) as well as trade-offs between local gains and losses versus global gains or losses in health, economic, and environmental security (Gallo-Cajiao et al., 2022). Several projects explored aspects of the knowing-to-doing process at the local, regional, and international level.

Local Coordination Mechanism

Painted murals by school students to raise awareness about wildlife and the balance of the ecosystem.

Photo © Center for International Health (CIH) 2024

Organisations
Center for International Health (CIH), Ludwig Maximilian University of Munich (LMU)

Partner Organisations
Universidad San Francisco Xavier de Chuquisaca, Sucre, Bolivia; Universidade Federal do Paraná, Curitiba, Brasil; Universidad O'Higgins, Chile; Universidad San Carlos de Guatemala, Guatemala

Site Locations
Bolivia, Chile, Brazil, Guatemala

Challenge Addressed
Deforestation, land use transformation, urbanisation, and zoonotic spillover

Highlights

Focus on local community engagement led to strong participation from local authorities (such as community representatives and neighborhood associations) and also government authorities (including municipalities, representatives of health services, protected areas, and agricultural-livestock services), and other private entities such as NGOs and foundations, which are committed to biodiversity and wildlife conservation.

Project Overviews

Building Awareness of the Need for Change

Having knowledge about the dangers of risky behaviours and what can be done to reduce risk is essential for making informed decisions. Three of the projects focused on building people's awareness of the need to change their interactions with wildlife trade. The first, in **Mongolia**, **Vietnam** and **Bhutan**, reflected Buddhist principles when designing and implementing nation-wide awareness campaigns to promote reducing wildlife trade and consumption. The second project, based in **Indonesia**, raised awareness, particularly in children, through various approaches in different regions. Illustrated children's books were developed in native languages, incorporating local values and traditions to foster an understanding of wildlife and nature conservation. The third project aimed to raise public awareness about health risks associated with wildlife trade and promote the One Health approach by utilising and expanding education programs in wildlife sanctuaries across four African countries: **Cameroon**, **Liberia**, **Nigeria**, and **Zambia**. That initiative focused on increasing awareness about the dangers of contact via hunting, and consumption of wildlife, presenting alternative solutions, and motivating governments to take necessary actions. It has been estimated that these 3 projects reached 12 million people in multiple countries.

Knowledge, Attitude and Practices Affecting Risky Behaviours

Providing people with knowledge alone does not inspire change. One project in urban and rural areas of Latin America (**Bolivia**, **Brazil**, **Chile** and **Guatemala**), included indigenous communities to explore how cultural factors, knowledge, attitudes and practices influence interactions with wildlife. The results were intended to develop approaches tailored to the local context that promote behavioural changes in wildlife interactions and consumption.

SPOTLIGHT ON SOCIAL & BEHAVIOUR SCIENCE PROJECTS

Value-based Public Outreach

Photo © NABU International / Dr. Barbara Maas

Organisation
Nature and Biodiversity Conservation Union International Nature Conservation Foundation, Germany (NABU)

Partner Organisations
Association of Mongolian Buddhist Devotees (Mongolia), Central Monastic Body Media Office (Zhung Dratshang Media Office, Bhutan);
Nature Conservation Foundation, Vietnam

Site Location
Mongolia, Bhutan, Vietnam

Challenge Addressed
Zoonotic hotspots in illegal trade of high-value endangered species

Highlights

Buddhist organisation collaborations across government and non-governmental institutions yielded project communications integrating Buddhist principles that reached more than 1.8 million people across three countries through Facebook, YouTube, television, newspapers, academic journals, workshops, and thematic summits.

SOCIAL ROLES AND RESPONSIBILITIES

Gender Dynamics

Photo © EcoHealth Alliance / Nutthinee Sirichan

Social roles and responsibilities affect who is most at risk for acquiring infections within wildlife trade and who is best positioned to act on those risks.

Socially constructed gender roles and gendered responsibilities impact how women and men are exposed to health risks along the wildlife trade chain. Different projects have taken gender-sensitive measures to respond to these gender dynamics, EcoHealth Alliance has implemented gender-sensitive measures in their project work in Thailand and Vietnam.

Often, it was observed that women are mostly responsible for the preparation of the meats and domestic husbandry, whereas men are more engaged in hunting or have generally more outdoor contact with wildlife. Based on these observations, EcoHealth Alliance ensured the equal participation of women during interviews and focus group discussions to collect different perspectives and experiences in relation to risk exposure. However, ensuring equal participation of women in interviews can also be challenging: Sometimes mixed-gender interviews may not be appropriate in certain cultural settings. Hence, WWF Germany ensured to also include female enumerators in the research team. This way, it was more likely for women to participate. Yet, not only collecting information, but also the access to knowledge and information can be challenged by certain gender dynamics. Knowledge must be equally accessible for all community members. Existing gender disparities in social hierarchies may hinder access to information. In the context of EcoHealth Alliance's work, men are key opinion leaders and women bear care responsibilities, including hygiene and sanitation. Therefore, women's access to information, tools and skills for risk mitigation measures, such as wearing masks or washing hands, is crucial for ensuring the safety and health of the community. Pro Wildlife ensured equal access to information through targeted activities: Raising awareness through football tournaments successfully reached groups of men, and face-to-face interactions with local women's groups worked well to engage and raise awareness among women.

Overall, existing gender roles and social dynamics need to be considered to ensure equal participation and equal outcomes.

Pathways for Bridging and Moving Knowledge

A project in **Vietnam** established an interdisciplinary and cross-sectoral network to enhance communication and collaboration between scientists, policymakers, and communities. Meanwhile, a transnational education campaign developed across **Africa** established a consortium of wildlife sanctuaries to facilitate mutual learning and knowledge exchange, adapt educational tools, and develop new strategies for effective outreach. In the **Philippines**, scientists and practitioners from diverse disciplines were recruited and trained to support a transdisciplinary professional development of future leaders in the tertiary education sector.

Key Lessons Learned

Health security within wildlife trade cannot be achieved without considering the full knowing-to-doing cycle. Successful implementation of interventions requires a holistic understanding of the process of making people aware of the need for change, understanding the interplay of values, knowledge and practices, and actively planning on how to mobilise what we know into what we do to decrease risks. Strategies to move knowledge into action require social scientists to help us understand peoples' attitudes toward the changes we want them to make, what the community and respected figures think about the required change, and people's perceptions about their ability to act in a way that will decrease risk.

Legal & Regulatory Projects

"No amount of technology can save us from poor governance once an epidemic takes hold in the human population."

(Bernstein et al., 2022).

Laws and regulations that enable prevention, control and response to infectious diseases have been in existence for centuries. There are many current examples of international frameworks, treaties and conventions that encourage international collaboration and national efforts to countermeasure emerging diseases risks. Examples include the International Health Regulations, Convention on Biological Diversity and the developing Pandemic Accord. The good intentions set out in international agreements need to be tailored to the unique conditions of a country through national policies and programmes, which in turn need to be tailored to local capacities, traditions and circumstances through adaptive policies. For example, sanitation and hygiene standards of traditional food markets, regulated by national or local competent authorities, have been one focal activity for pathogen risk reduction for workers and consumers (WHO, 2021).

Laws and regulations provided the authority, spending power and capacity to turn legislative intentions into on-the-ground change. The One Health approach espoused by many national and international organisations is often impeded by the legal barriers that silo regulatory authority and capacity. Finding ways to integrated sanitary measures with environmental protection, conservation, sustainable development, food security, economic development and other legislative expectation is extremely challenging. Working on the synergies among these areas is key to preventing or mitigating the impact of diseases associated with wildlife trade. Global, regional and national inter-sectoral governance mechanisms are needed to enable consistent and collaborative cross-sectoral regulatory responses, minimise gaps and clarify conflicting or overlapping mandates (FAO, 2020). Some of the 18 projects focused on ways to tailor regulations and legislation to the unique challenges different countries confront when trying to manage risks in wildlife trade.

A wildlife detection dog is assisting government officials to detect wildlife products in a car during road checkpoint in North Sulawesi.

Photo © Dalberg Catalyst / Juan Robin

Project Overviews

Strengthening and Diversifying Regulations

The Wildlife Conservation Society (**China**) worked with local partners to strengthen government regulatory and surveillance authorities. The project reviewed and assessed existing policies and formulated policy recommendations to enhance the systematic implementation of cross-sectoral and integrated approaches.

In **Indonesia**, the Dalberg Catalyst led a team that worked to encourage Indonesian policymakers to employ measures for spillover prevention by enhancing their understanding of effective political reforms and policies, as well as fostering dialogue between relevant national authorities to ensure the successful implementation of these reforms. Another key objective was to raise awareness and support for spillover prevention measures among G20 leaders during and after Indonesia's G20 presidency, as well as within the Association of South-East Asian Nations (ASEAN) region and East Asia.

Pathways for improving legislation on the prevention and control of zoonotic diseases were developed in **Angola**, **Botswana**, and **Zambia**. This project aimed to provide these countries access to additional knowledge tools (e.g., best legal practices, fact sheets, legislative agendas, etc.), enabling them to independently draft or amend laws and enhance their ability to control zoonotic outbreaks. As part of the

SPOTLIGHT ON LEGAL & REGULATORY PROJECTS

Strengthening Regulations and Diversifying Actions

Organisation
Dalberg Catalyst

Partner Organisations
Preventing Pandemics at the Source (PPATS)
Wildlife Conservation Society (WCS)
Yayasan Alam Sehat Lestari (ASRI)

Site Location
Indonesia, Southeast Asia

Challenge Addressed
Gaps in policy architecture and in capacity building frameworks as illegal wildlife trade increases

Highlights

Cross-sector collaboration was strengthened through initiatives such as establishing road checkpoints in high-traffic areas to monitor meat transportation. Additionally, journalists' capacities were enhanced through a young journalist training programme, which resulted in 24 published news articles aimed at improving media coverage on One Health issues. Furthermore, a One Health policy paper was developed and disseminated to engage multiple stakeholders.

project, national laws directly or indirectly related to zoonotic diseases and wildlife trade were identified and summarised and further developed within the respective legal frameworks of each country.

Enhancing International Guidelines

The IUCN was the implementing organisation for a consortium that looked for gaps in existing WOAH guidelines and subsequently developed and disseminated new guidelines. Through joint outreach efforts by the IUCN and WOAH, the profile of the guidelines was strengthened across the conservation sector and within governmental environmental and wildlife authorities.

Photo © IUCN / Kevin Smith

Relationship Building

In addition to community engagement, a project in **Indonesia** collaborated with relevant political stakeholders to develop strategies aimed at strengthening institutions and systems related to wildlife trade and protection. In **Vietnam**, an interdisciplinary and cross-sectoral network was created to enhance communication and collaboration between scientists and policymakers, helping to identify collaboration opportunities within national policy systems.

Key Lessons Learned

These projects, as well as sub-activities in other projects, were attentive to the process of creating and implementing policies that support risk reduction. Several efforts helped to get wildlife trade onto policy agendas. Key to this was the creation of relationships between various stakeholders and avenues to exchange knowledge needed to set policy priorities. Others helped to establish policy options that could benefit multiple sectors while reducing disease risks. Still others focused on building capacity needed to understand, create and implement new policy frameworks. Given the global implications of disease spillovers in wildlife trade, efforts to harmonise and standardise guidelines and regulations were important to promote risk reduction that is consistent globally but nationally adaptable.

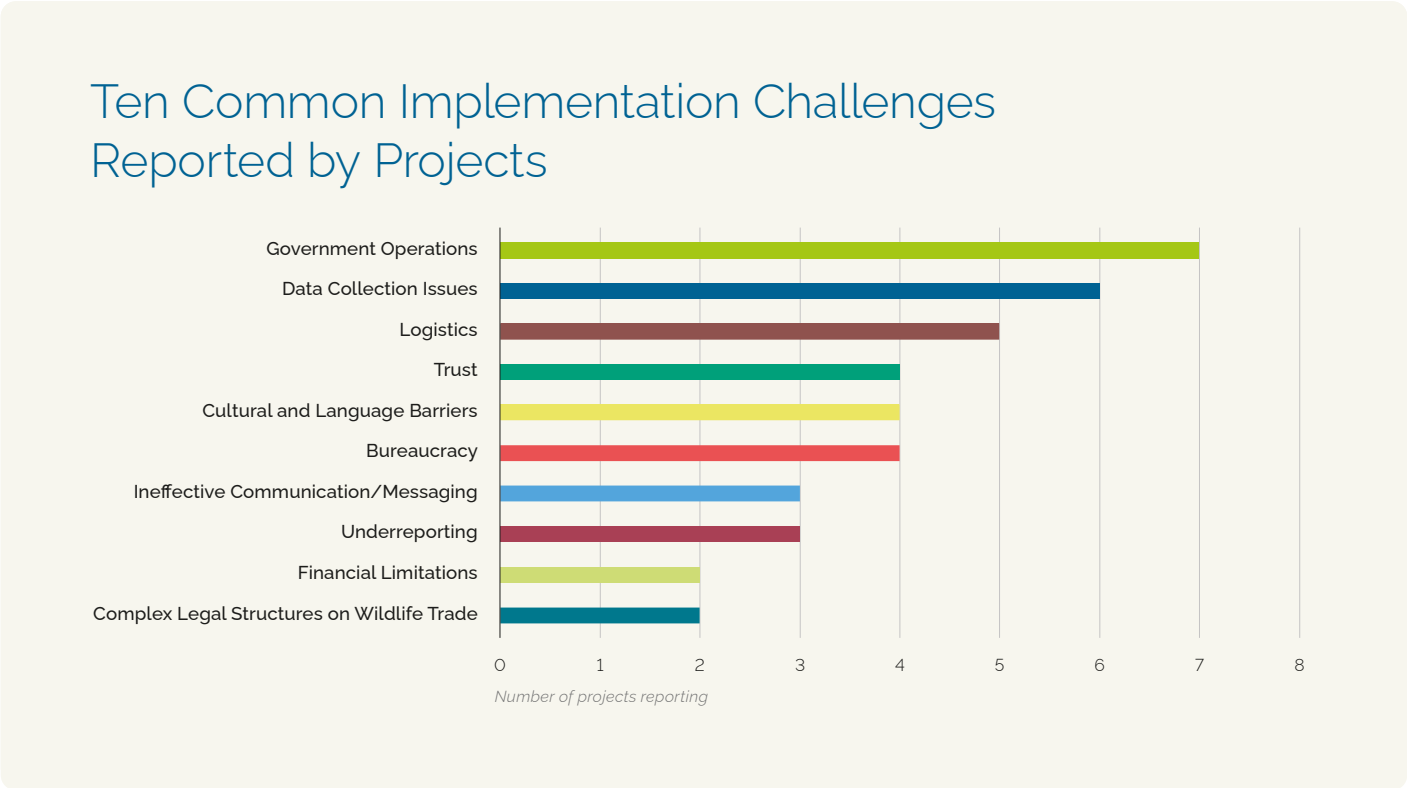
Making it Happen — Lessons Learned about Project Implementation

Most projects faced a variety of challenges to implementing their activities. Some were challenges commonly encountered by many collaborative projects aiming to change risky situations. Figure 2 compiles shared challenges reported by all three project theme types. None but the last challenge is unique to wildlife trade. Volumes have been written describing these same challenges in global health, One Health, sustainable development, conservation and other complex, collaborative efforts. These shared and sustained challenges surely point to the need for attention and investment to remedy them. New governance mechanisms, investment in trust and relationship building, building locally, culturally relevant expertise, and other ideas have been proposed in many different venues. Efforts to speed and sustain risk reduction in wildlife trade need to be attentive to such widely shared operational impediments.

New governance mechanisms, investment in trust and relationship building, building locally, culturally relevant expertise, and other ideas have been proposed in many different venues.

Other challenges were more specific to infectious disease risk reduction in wildlife trade. For example, many projects identified limited foundation of knowledge on specific health risks at the local level as a central barrier to implementation. Projects encountered barriers due to varying understanding of and response to the One Health approach. One Health was often focused on livestock-human interfaces, but rarely were wildlife and biodiversity incorporated. One project identified that infectious disease in wildlife trade was "hardly a priority" for developing countries. The complex legal structures impacting wildlife trade further complicated efforts to find readily implemented opportunities to better understand or manage infectious diseases risk in wildlife trade. No single discipline can overcome these barriers. Collaborations that involve different ways of knowing, including local knowledge and perspectives, are paramount in any strategy confronting with these unique challenges.

Figure 2. Common Challenges Identified by Projects during Implementation. Additional Information on Contributing Factors for Each of the Ten Encountered Challenge Types is Provided in the Footnotes.



(a) **Government Operations:** changing governments and elections interfere with projects; unclear or overlapping government responsibilities; suspicion and aggression; government restrictions on foreign non-governmental organisations (NGOs) and political sensitivities surrounding the pandemic and wildlife; collaborating across agencies; resistance of governments to collaboration and on spillover prevention; humanitarian conflict; corruption.

(b) **Data Collection Issues:** approaching wildlife farmers is not practically easy; capacity building issues with procurement and proper use of laboratory equipment and materials; refusal bias; long time frames, expenses, and transportation issues for pathogen samples; quality of work (e.g., entry errors, limited field staff, little oversight).

(c) **Logistics:** travel restrictions; remoteness of project or delivery sites and of necessary resources; prohibitive weather; remote transportation issues; projects in context of limited infrastructure, communication, roads, or conflict; access to basic and development services, communication networks; geographically challenging landscapes.

(d) **Trust:** trust of community members, stakeholders, and government agents and institutions; heightened distrust of the elderly; work requires long-term partnership.

(e) **Cultural and Language Barriers:** identifying appropriate local translators; stakeholder literacy; difficulty identifying species of meat; significant differences in understanding and knowledge base of urban versus non-urban communities along the same supply chain; resistance to giving up traditional eating habits.

(f) **Bureaucracy:** delays for permits, visas, export certificates for samples; long ethical clearance procedures; long government approval period for white papers.

(g) **Ineffective Communication/Messaging:** (inconsistent, negative, or poorly targeted communication or messaging) practical versus alarmist messaging; difference in outcome of risk reduction messaging yielding "no" versus "safer" bushmeat consumption; lack of communication interferes with coordination; need for gendered perspective when starting communication campaigns to reach target groups.

(h) **Underreporting:** illicit wild meat trade leads to underreporting due to little to no incentive to engage as a stakeholder; suspended hunting permits leads to adverse consequence of increasing illicit procurement; fear of law; mistrust.

(i) **Financial Limitations:** limited government budgets to implement existing or applicable laws; pathogen analysis is expensive.

(j) **Complex Legal Structures on Wildlife Trade:** poor understanding of regulations related to wildlife; species labelling may inadvertently promote commercialisation; absence of legal framework and technical standards leads to low incentives to mainstream biosecurity measures.

> *Values-based approaches where children are the messengers for their parents and families."*
>
> — OHCC Udayana University

> *Collaborations with partners from faith-based communities to reach and positively influence the behaviour of wildlife consumers and traders."*
>
> — NABU International

Insights from Project Implementing Organisations about effective approaches

> *Radio broadcasts and jingles were realised in popular radio programs in Nigeria and Zambia, serving as an excellent tool to reach a wide audience in their daily lives. In Zambia, representatives of authorities were part of the radio shows, which helped to increase credibility and acceptance."*
>
> — Pro Wildlife

> *Developing health standards for financing large scale development projects is novel and innovative with potential for a huge effect."*
>
> — UNEP

Specific considerations to prioritise in the future design of One Health approaches to reducing the health risks of wildlife trade include:

Planning

- structure sufficient time for stakeholder mapping, partnership, relationship building, and co-design and administrative arrangements for collaborations
- closely involve the technical coordinating agency of the project in the development of operation plans
- recruit top-level officials as champions
- target both upstream and downstream actors in behaviour change activities to increase likelihood of success

Communication

- link public messaging to practical daily life issues (family, health, children's future, happiness, community) to increase acceptance and to initiate a dialogue and achieve behavioural change
- plan for engaging and educating the media for widespread coverage and awareness-raising
- co-design educational strategies with local values and knowledge on nature and animals

Social Aspects

- consider gender roles in wildlife trade and how this influences exposure to disease risk and actively ensure the participation of women, the creation of safe spaces to collect women's perspectives and insights in their roles, the integration of intersectionality, and the creation of equal outcomes that respond to observed gender dynamics
- identify and respect cultural practices related to wildlife while raising awareness about associated risks to preserve traditions through an integrated approach
- prioritise listening and observing from local communities

Bringing it all Together

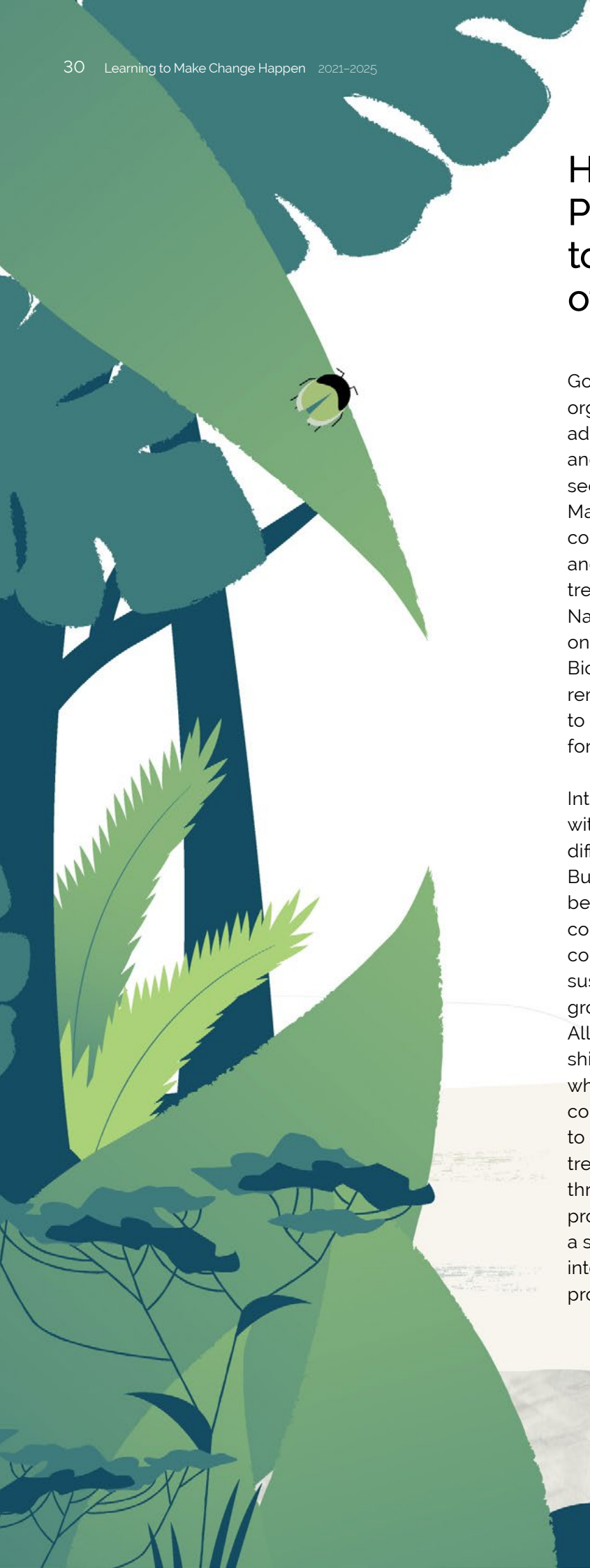
The problem of health risks associated with wildlife trade is a wicked problem. Each spillover cascade is unique in its own respect. There remain great uncertainties about how to best reduce the risk and the suite of possible solutions can be very large. Many people and organisations are involved or affected. It takes time and resources to get to root issues, and fixing one aspect of the problem can create new problems. There is no single, elegant finding that will point to the right decision to fix the problem. But these 18 projects show that progress can be made when organisations switch from being the one to provide the single, right solution, to working with others to develop a collective view of the possible incremental improvements that can be made.

These projects showed that having the ability to cooperatively work across boundaries, engage stakeholders and citizens in understanding the problem and identifying solutions, engage in big picture thinking, understand behavioural change, have a shared vision, and accept uncertainty was more important than having perfect scientific data when the object is to incrementally move us to safer circumstances now.

[...] progress can be made when organisations switch from being the one to provide the single, right solution, to working with others to develop a collective view of the possible incremental improvements that can be made.

Wildlife trade risk management is highly context-specific and highly interconnected. New disease management regulations or programmes must respect other goals, such as for conservation or community development, to secure the necessary collaboration for sustainable change. The strong biomedical foundations of One Health have been a launching pad for a wider set of perspectives and skills that can find win-win-win solutions across sustainable development, health protection and ecosystem conservation. Strategies that enhance and sustain involvement of social sciences and environmental sciences along with biomedical sciences are critical for effective and holistic risk management.

Each successful spillover event is complex and unique. No two wildlife trade supply chains are the same. Risks within the trade are, therefore, local events that need local solutions. There is a strong argument that local solutions, and community-based research to find them, are essential to risk reduction. But there is power in sharing local experiences. Rapid diffusion of solutions is paramount if the world wants to prevent and mitigate disease risks in wildlife trade. Leveraging lessons learned from past experiences in other situations can help speed the design and adoption of best practices to local situations. The Alliance plays a key role in reinforcing and amplifying locally developed innovations and facilitating their diffusion and adaption to other settings.



How the Alliance-supported Projects Illuminate Pathways to Realising the Aspirations of International Agreements

Governments, international fora, multilateral organisations, and civil society are increasingly advocating for health, environmental sustainability, and social equity to be managed holistically across sectors, at multiple scales, in an integrated fashion. Many international agreements acknowledge the complex interdependence between people, wildlife and their environments including the pandemic treaty, Quadripartite One Health Action Plan, United Nations Sustainable Development Goals, Convention on Biological Diversity, Kunming-Montreal Global Biodiversity Framework, and others. These are stark reminders that this interdependence is fundamental to the health of all species and cannot be taken for granted.

International conventions and agreements concerned with wildlife trade establish intentions to do things differently, and better, to avert future health crises. But intentions cannot be realised unless actions can be effectively and sustainably implemented. Despite commitments to transform how we link community, conservation, and health, there are still not enough sustained cross-policy collaborations driving on-the-ground change to secure global health security. The Alliance-supported projects summarised in this report shine light on tangible pathways and processes by which health, conservation, and community can be connected. Examples of how each project contributed to achieving goals of international conventions, treaties, agreements and expectations are found throughout this report. These Alliance-supported projects reveal pragmatic ways to move us towards a safer world. They provide optimism that the intentions outlined in international agreements and proclamations are viable and achievable.

Local issues matter when it comes to reducing health risks in wildlife trade. All disease outbreaks start as local events. Balancing pressure to sustain marine and terrestrial biodiversity while also supporting sustainable production and consumption, as expected from the UN Sustainable Development Goals (SDGs), requires a detailed understanding of local pressures and circumstances. The WOAH guidelines for reducing risks in wildlife trade emphasise the importance of tailoring interventions to local socio-ecological conditions. Locally embedded and partnered projects are, therefore, fundamental to health and environmental security. The projects summarised in this report show the value of an organisation such as the Alliance which maintains a constant focus on reducing health risks in wildlife trade by enabling smaller-scale, locally informed collaborations. The investments made by the Alliance not only generated new insights into mechanisms and magnitudes of risk, but also help build local relationships, capacity, and policies that provide foundations for future efforts to implement the intentions of international agreements.

Effective and acceptable policies tailored to prevailing circumstances are essential for wildlife trade risk prevention and management. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) noted the importance of enabling national authorities to combat risks arising from wildlife trade by increasing their policy related knowledge and skills. The overwhelming presence of biomedical and epidemiological methods in the One Health field needs to be balanced with policy and legal research and development if the aspirations elaborated in international agreements can be realised. Innovative policy solutions are needed to overcome the known barriers to collaborations such as organisational cultures, conflicting mandates, and disparate interests through new mechanisms for communication, relationship building and stakeholder engagement. As recognised by the UN Office on Drugs and Crime (UNODC), wildlife trade policies need to be supported by appropriate laws. Understanding the strengths and weaknesses in current legal arrangements can inform strategic policy development. Each of the projects featured in this report, in their own way, confronted policy and/or legal challenges and worked on developing locally relevant solutions.

The overwhelming presence of biomedical and epidemiological methods in the One Health field needs to be balanced with policy and legal research and development if the aspirations elaborated in international agreements can be realised.

Organisations such as the IUCN and WOAH have emphasised the importance of increasing the knowledge base through collaboration and information sharing as a key strategy to accelerate risk reduction. All the projects summarised in this report showed the value of peer-to-peer learning and sharing of international experiences when helping to evolve a country's and community's policies or practices. Combining traditionally distinct knowledge, skills, and perspectives with the experience and knowledge of stakeholders and collaborators is a growing expectation of universities, businesses, and governments. This approach underlies all international intentions to foster One Health for pandemic prevention, food security, conservation, climate change resilience, and more. The Alliance-supported projects provide important lessons and experiences on how to get this done in wildlife trade.

Ground pangolin rolling up in the grass in the WGR, South Africa.

While so often asked for by funders, it is impossible to translate the investment in these projects into lives or dollars saved. Drawing direct lines between the activities and output of a single project and the goal of an agreement or convention is excessively challenging. Risk in wildlife trade is a muti-faceted, highly complex issue influenced by many factors and many interdependencies. It would be disingenuous to provide estimates of lives or dollars saved. How then do we judge if the investment made by the Alliance in these projects was a successful investment?

Interventions in highly complex and interconnected circumstances, like wildlife trade, cannot aim for a definitive solution, but instead, need to foster ongoing learning, adaptation, and improvement of the process. Each of these projects enhanced understanding, engagement, and collaboration among diverse stakeholders; learned by adapting diverse strategies and experiences to improve surveillance, programmes or policy processes; and each built capacity of individuals and organisations to address risk more effectively in the future. They maximised relatively small investments into new relationships, policies, capacities, and integrated information to incrementally contribute to better preparedness, prevention, or response to health crisis arising in wildlife trade.

Success happens when projects support partner-relevant needs in ways that are accessible, understandable, and shared, and create opportunities for change, all of which are characteristic of the featured projects. Each of the Alliance-supported projects addressed issues that were both locally valued and internationally expected.

Success requires alignment of an intervention with needs, resources and capabilities, priorities and culture, mechanisms for sustainability, and the regulatory environment. These projects were attentive to unique local needs while also addressing intentions of international agreements. All were done with sensitivity and attention to not only the regulatory environment in each country but also the ethical issues such as equity and fair information sharing.

By these criteria, we can, therefore, conclude that these projects were successful. We invite you to learn more about how the projects presented in this summary report met these success criteria by reading more about them at Projects Archive — International Alliance against Health Risks in Wildlife Trade.

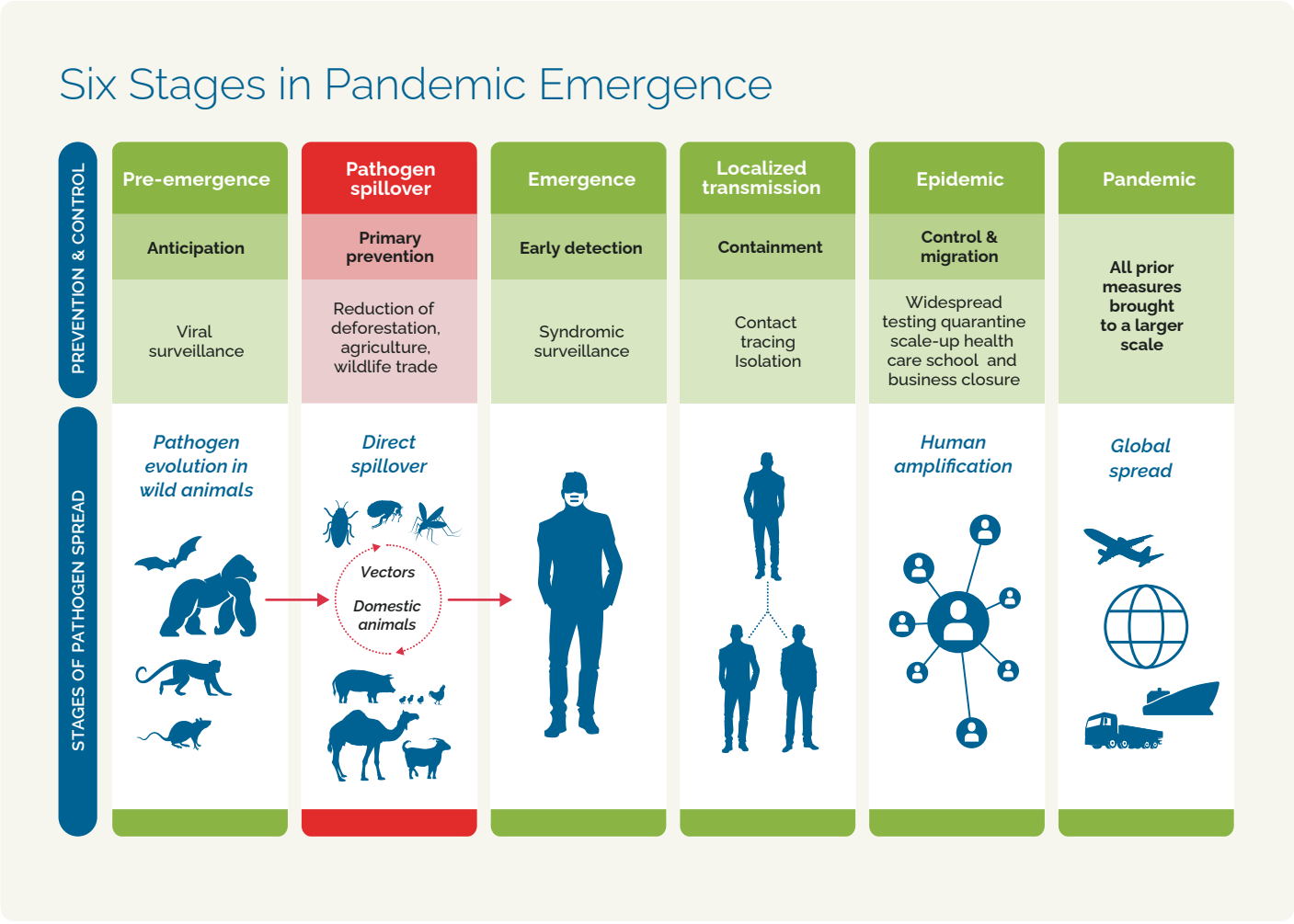
4.

Closing Remarks

The 18 projects summarised in this report are testimony to the fact that effective, locally relevant small-scale projects can teach us much. The complexity and length of the wildlife supply chain introduces many potential risks, but also critical control points and intervention opportunities. The volume of wildlife trade contributing to the human-wildlife interface is significant and growing, which continuously increases the risk (IPBES, 2020) and therefore requires concurrently increased risk management that benefit people, wildlife, and the rest of biodiversity.

An effective risk management agenda needs to work across all stages of the emergence of a pandemic (Figure 3). It cannot be human first, nor animals first, nor ecosystems first, but rather must look at all together. This approach will challenge our educational and governance systems, but the transition to such systems-based thinking, as suggested by these 18 projects, will be essential for our survival.

Figure 3. How a Pandemic Emerges: Six Stages in Pathogen Spread and Measures for Prevention and Control



(adapted from Bernstein et al., 2022)

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Annex

In a Nutshell — Short Profiles of 18 Projects Supported by the International Alliance against Health Risks in Wildlife Trade

Pathogen Discovery

Health Monitoring of Animals Subject to Illegal Trafficking from the One Health Perspective

Abbreviation	CHARITÉ
Implementing Organisation	Charité Universitätsmedizin Berlin
Partner Organisation	ARCAS Wildlife Protection Guatemala
Country	Guatemala
Risk/Gap Addressed	Lack of knowledge on wildlife health
Description	This project aimed to close knowledge gaps regarding the health of wildlife in northern Guatemala and strengthen the regional knowledge on One Health issues to improve the chances of early detection of pathogens and future conservation of the integral health of the wild fauna of the Maya Biosphere Reserve. To this end, the project strived to train personnel from different institutions based in the Selva Maya regarding One Health, recognition of events of importance in animal health, and biosecurity. In addition, the project aimed to equip an entity dedicated to the health of wild animals and create a methodology for obtaining viable samples for correct long-term storage, safeguarding irreplaceable biological information, and facilitating present and future research.
Links	Organisations: - Institut für Virologie — Charité — Universitätsmedizin Berlin - ARCAS Wildlife Protection in Guatemala

Photo © Charité

Changing Dynamics and Health Risks along the Illegal Wildlife Trade Supply Chain from Myanmar to China and Thailand

Abbreviation	Goethe University Frankfurt
Implementing Organisation	Goethe Universität Frankfurt am Main
Partner Organisations	Ministry of Natural Resources and Environmental Conservation (MONREC) and Ministry of Health (MOH) of the National Unity Government of Myanmar (NUG) Karen Department of Health and Welfare (KDHW) Kachin State Comprehensive University (KSCU)
Country	Myanmar
Risk/Gap Addressed	Severely understudied pathogen pathways
Description	The project aimed to investigate changing dynamics and health risks at multiple levels along the wildlife trade chain in Myanmar. In particular, the project sought to identify pathogens circulating in wildlife, including prey, predators, and arthropods as disease vectors of traded or locally consumed species. As part of a One Health approach, livestock, other domestic animals, and humans were also studied to determine if, where, and how such pathogens cross species boundaries along the wildlife trade chain. These investigations were embedded within a contextual socio-cultural and socio-economic study of actors who were involved along the entire wildlife contact chain in the study areas. Training was provided with a focus on participatory research techniques that are adapted to conflict and gender dynamics.
Links	Organisations: - Goethe-Universität — Institut für Arbeitsmedizin, Sozialmedizin und Umweltmedizin - Ministry of Natural Resources and Environmental Conservation (MONREC) Myanmar — Ministry of Natural Resources and Environmental Conservation - Ministry of Health (MOH) Myanmar - KDHW Website — Karen Department of Health and Welfare - Kachin State Comprehensive University — KSCU

Mosquito trap with yeast generated CO_2 as attractant

Health Risks Associated with Urban Wild Meat in Nairobi, Kenya and Lagos, Nigeria

Abbreviation	Stichting Wageningen Research
Implementing Organisation	Stichting Wageningen Research, Wageningen Environmental Research
Partner Organisations	International Livestock Research Institute (ILRI), Kenya African Center of Excellence for Genomics of Infectious Diseases (ACEGID), Nigeria
Countries	Kenya, Nigeria
Risk/Gap Addressed	Disease entry points in wild meat value chains
Description	The urban demand for wildlife meat in Africa is steadily increasing and is linked to the areas of origin of wildlife products through complex supply chains as well as formal and informal transfer points to the areas of origin of wildlife products. The project aimed to evaluate and assess the health risks to make policy recommendations to decision-makers based on these risks. The project revealed that wild meat activities peaked during the dry season, indicating heightened risk of zoonotic spillover. In Lagos, 'social norms' and 'income' were key drivers of the trade. Species availability was shaped by abundance, ease of capture, and cultural factors. Female actors operated a more formal governance structure, offering potential entry points for monitoring and regulation.
Links	Organisations: - University — WUR - ACEGID — Build Health International - ILRI Home Products: - https://doi.org/10.1016/j.onehlt.2025.100992:

Photo © Dr. Edward King'ori of the Kenya Wildlife Services, KWS

Zoonosis Risk Along the Bushmeat Value-chains. The Case of Salonga National Park and Kinshasa, Democratic Republic of Congo

Abbreviation	WWF Germany
Implementing Organisation	World Wildlife Fund (WWF) Germany
Partner Organisations	Helmholtz Institute for One Health, Greifswald National pour la Recherche Biomedicale, Kinshasa WWF DRC, (APPACOL-PRN)
Country	Democratic Republic of the Congo
Risk/Gap Addressed	Risks of zoonotic transmission, tracing the chain from national parks to urban end markets with high population density
Description	The project aimed to identify risks of zoonotic disease transmission along the wildlife trade chain — from the source in a national park to end markets in large, densely populated urban areas. Revealed risks should contribute to raise awareness and promote better monitoring and regulation of wildlife trade. The project identified several pathogens in over 600 animal and meat samples, most from high-risk taxa, highlighting the potential for zoonotic disease transmission. Meat handling practices were often unhygienic, involving direct contact with blood and tissues using bare hands. Only a small proportion of interviewees recognised wildlife as a potential source of health risks, indicating low awareness within local communities. Hunting was primarily driven by financial incentives, and wild meat was mainly consumed due to a lack of affordable protein alternatives. Regulation and enforcement were minimal, despite a growing demand for bushmeat.
Links	Organisations: - WWF Deutschland — Organisation für Natur- und Artenschutz - Helmholtz Institute for One Health in Greifswald | HIOH | HELMHOLTZ HIOH - Institut National de Recherche Biomédicale - Home | WWF DRC

Photo © WWF

Social & Behaviour Science

Mitigating Risks of Disease Transmission in the Wild Meat Food Chain from Forest to Fork in Cameroon

Abbreviation	CIFOR-ICRAF
Implementing Organisation	Centre for International Forestry Research — World Agroforestry (CIFOR-ICRAF)
Partner Organisation	PSU, Forests Resources and People (FOREP)
Country	Cameroon
Risk/Gap Addressed	Zoonotic pathogen exposure in wild meat handling in the wild meat food chain
Description	This project aimed to understand risk-related behaviours along Cameroon's wild meat food chain to inform targeted interventions and recommendations to reduce health risks from wild meat handling. To this end, the project analysed behaviours related to wild meat handling through a systematic mapping of existing studies. Building on this foundation, surveys were developed and conducted to explore perceptions of zoonotic disease risks and risk-mitigating behaviours among hunters, food preparers, and vendors. The findings informed social and behaviour change campaigns which were co-created with local stakeholders. The campaign was implemented in eight villages and included community meetings, door-to-door sensitization, radio messages in three languages, school activities, engagement with religious institutions and community associations, and a contest to design safer, more comfortable wild meat backpack carriers (Kingas).
Links	Organisations: - Home | CIFOR-ICRAF - forep.org — Forest Resources and People Products: - A systematic mapping review of links between handling wild meat and zoonotic diseases — ScienceDirect

Photo © CIFOR-ICRAF

Knowledge, Attitudes, and Practices Towards the Risk of Zoonotic Diseases, Wildlife Trade and Wildlife Consumption in Latin America

Abbreviation	LMU
Implementing Organisations	Clinic of the Ludwig Maximilian University of Munich (LMU), Center for International Health (CIH)
Partner Organisations	Universidad San Francisco Xavier de Chuquisaca, Sucre, Bolivia Universidade Federal do Paraná, Curitiba, Brasil Universidad O'Higgins, Chile Universidad San Carlos de Guatemala, Guatemala
Countries	Bolivia, Chile, Brazil, Guatemala
Risk/Gap Addressed	Deforestation, land use transformation, urbanisation and zoonotic spillover
Description	The project aimed to assess knowledge, attitudes, and practices (KAP) related to zoonotic disease risks, wildlife trade, and consumption among diverse populations in urban and rural areas of Latin America — including indigenous communities in Bolivia, Brazil, Chile, and Guatemala. Surveys conducted in these countries provided essential insights into local contexts, and were supplemented by interviews with key stakeholders and focus group discussions to refine insights on local cultural influences and perceptions, wildlife conflicts and conservation, and wildlife use. Roundtable discussions with stakeholders proposed specific actions to address the identified issues. The activities included educational initiatives to raise awareness of zoonotic risks, and promote environmental protection, fostering collaboration among stakeholders, and conducting school interventions through culturally adapted tools. In each country, tailored pilot interventions were implemented to address specific needs and contexts, promoting awareness and action across diverse audiences.
Links	Organisations: - We empower health professionals | CIH - Inicio — Universidad Mayor Real y Pontificia de San Francisco Xavier de Chuquisaca - Universidade Federal do Paraná - Universidad — Universidad de O'Higgins - Universidad San Carlos de Guatemala Products: - How studies on zoonotic risks in wildlife implement the one health approach — A systematic review — ScienceDirect

Person dressed as a "Jucumari Bear" (a type of Andean bear), as a cultural representation (dance) on the anniversary of the study area Presto, Bolivia. Project by the Ludwig Maximilian University of Munich (LMU).

A Buddhist Wildlife Trade Demand Reduction Initiative in Southeast Asia

Abbreviation	NABU International
Implementing Organisation	Nature and Biodiversity Conservation Union International Nature Conservation Foundation, Germany
Partner Organisations	Association of Mongolian Buddhist Devotees (Mongolia) Central Monastic Body Media Office (Zhung Dratshang Media Office, Bhutan) Nature Conservation Foundation, Vietnam
Countries	Mongolia, Bhutan, Vietnam
Risk/Gap Addressed	Zoonotic hotspots in illegal trade of high-value endangered species
Description	Rooted in core Buddhist principles, the project aimed to drive value-based behavioural change by developing and implementing awareness campaigns in Mongolia, Vietnam, and Bhutan. By reducing wildlife trade through demand reduction, the project aimed to significantly lower the risk of zoonotic disease. The project received support from Buddhist leaders across the three participating countries, with monastic leaders committing to integrate its message into their teachings and outreach efforts beyond the project's duration. In collaboration with Buddhist organisations, governmental, and non-governmental institutions, targeted communication formats were developed in three countries. Educational workshops and teachings were conducted across monasteries, schools, and key governmental and non-governmental organisations in all seven project locations in Mongolia. The project's messages reached over 1.8 million people through a variety of platforms, such as social media and television.
Links	Organisation: - NABU International Naturschutzstiftung

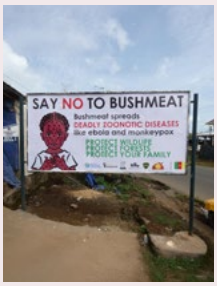
Photo © NABU International / Dr. Barbara Maas

The Application of One Health Approach to Raise Wildlife Protection Awareness (OHAWE) in Indonesia

Abbreviation	OHCC Udayana University
Implementing Organisation	Udayana University, One Health Collaborating Center
Country	Indonesia
Risk/Gap Addressed	Insufficient public knowledge and awareness regarding zoonotic spillover from wildlife trade
Description	The project aimed to raise awareness among the Indonesian population, particularly children, through various approaches in the five regions covered by OHCC. To engage younger generations, illustrated children's books were developed in native languages, incorporating local values and traditions to foster an understanding of wildlife and nature conservation. In addition to these efforts, the project also utilised innovative outreach methods such as podcasts to educate both youth and adults on the responsible handling of wildlife and wildlife products, as well as on the dangers, conservation efforts, and animal health.
Links	Organisations: - Udayana University | One Health Collaborating Center (OHCC) Udayana University - One Health Collaborating Center — INDOHUN

Photo © Udayana OHCC

A Transnational African Zoonosis Education Campaign: Raising Awareness for Wildlife



Abbreviation	Pro Wildlife e.V.
Implementing Organisation	Pro Wildlife e.V.
Partner Organisations	Pandrillus Cameroon: Limbe Wildlife Centre (LWC) Pandrillus Nigeria: Drill Ranch Game Rangers International: Zambia Primate Project (GRI-ZPP) Libassa Wildlife Sanctuary, Liberia
Countries	Cameroon, Liberia, Nigeria, Zambia
Risk/Gap Addressed	Low awareness of health risks of zoonotic disease transmission through contact with wild animals and their products
Description	The project aimed to raise public awareness about the health risks associated with wildlife trade and promote the One Health approach by utilising and expanding education programmes in wildlife sanctuaries across four African countries: Cameroon, Liberia, Nigeria, and Zambia. The initiative aimed to raise awareness about the risks of wildlife contact, hunting, and consumption, promote alternative solutions, and encourage government action. As part of the project, a consortium of wildlife sanctuaries was established to facilitate mutual learning and knowledge exchange, adapt educational tools, and develop new strategies for effective outreach. The impact of awareness campaigns was evaluated by the consortium, leading to the creation of a modular education framework. A wide range of educational initiatives was developed to target different audiences, ensuring that scientific findings were translated into clear and accessible messages.
Links	Organisations: - Pro Wildlife — Tierschutz und Artenschutz weltweit - Homepage | Limbe Wildlife Centre - ZAMBIA PRIMATE PROJECT | Game Rangers Intern - Pandrillus » Drill Ranch - Libassa Wildlife Sanctuary — Home Products: - How-to-protect-wildlife-and-human-health.pdf

Photo © Limbe Wildlife Centre

Next Generation One Health Philippines: Building National Capacity for Transdisciplinary and Translational Research and Advocacy for Wildlife Conservation and Zoonotic Spillover Prevention in the Next 50 Years

Abbreviation	St. Luke's Medical Center
Implementing Organisation	St. Luke's Medical Center College of Medicine William H. Quasha Memorial
Partner Organisations	Planetary Health Philippines Department of Biology of the Ateneo de Manila University ASEAN Centre for Biodiversity
Country	Philippines
Risk/Gap Addressed	Low domestic capacity for One Health leadership
Description	The project aimed to strengthen domestic capacities for transdisciplinary One Health research, knowledge translation and advocacy to effectively address wildlife trade and biodiversity loss as drivers of infectious disease emergence, with the overarching goal of contributing to pandemic prevention within the coming decades. To this end, a small gender-balanced cohort of 12 Philippine professionals from diverse sociocultural and interdisciplinary backgrounds related to One Health, wildlife conservation, and zoonotic spillover prevention were recruited and trained to support the professional development of future leaders in the tertiary education sector and sensitise them to various aspects of the One Health approach including pandemic prevention.
Links	Organisations: - St. Luke's Medical Center College of Medicine - Home — Planetary Health Philippines - Department of Biology | Welcome | Ateneo de Manila University - Home — ASEAN Centre for Biodiversity Products: - Next Generation One Health Philippines: Building Capacity for Transdisciplinary and Translational Research for Pandemic Prevention - Edition 69 — Next Generation One Health Philippines: Building Capacity for Transdisciplinary and Translational Research for Pandemic Prevention — BCPHR Journal

Photo © St. Luke's Medical Center

Social & Behaviour Sciences / Law & Regulation *(hybrid)*

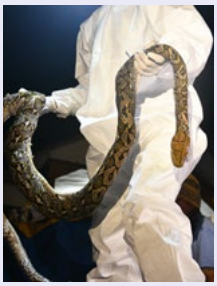
Mitigating Zoonotic Disease Emergence Risk in Wildlife Trade in Southeast Asia

Abbreviation	EcoHealth Alliance
Implementing Organisation	EcoHealth Alliance
Partner Organisations	Oxford University Clinical Research Unit, Vietnam Thai Red Cross Emerging Infectious Diseases Clinical Center Chulalongkorn University, Thailand
Countries	Thailand, Vietnam
Risk/Gap Addressed	Zoonotic risks in wildlife trade
Description	The project aimed to build an interdisciplinary and cross-sectoral network to improve communication and collaboration among scientists, policymakers, and local communities, with the overarching goal of reducing the emergence of zoonotic diseases in wildlife trade. To this end, the project focused on reducing transmission risks associated with wildlife farming practices in Vietnam. It also identified opportunities for collaboration within national policy systems to manage zoonotic transmission risks more effectively. In addition, the project developed targeted behaviour change strategies and refined and tested a newly designed toolkit to support the creation of context-specific intervention plans aimed at mitigating risks in wildlife trade.
Links	Organisations: - Scientific Research and Pandemic Prevention — EcoHealth Alliance - Homepage — OUCRU - Thai Red Cross Emerging Infectious Diseases Health Science Centre (EID): A Mission of Research, Diagnosis, Treatment, and Control of Emerging Infectious Diseases in Service of Humanity — Chulalongkorn University For Sustainable Development - Chulalongkorn University — Ranked No.1 University in Thailand Products: - Understanding Wildlife Farming and Zoonotic Disease Management in Vietnam Educational Material: - Living with Wildlife through One Health - One Health in the Wildlife Trade - Living Safely with Bats — EcoHealth Alliance

Bat guano packing, Thailand.
Photo © Nutthinee Sirichan

Law & Regulation

Spillover Prevention in Indonesia with Outreach to the Southeast Asia Region



Abbreviation	Dalberg Catalyst
Implementing Organisation	Dalberg Catalyst
Partner Organisations	Preventing Pandemics at the Source (PPATS) Wildlife Conservation Society (WCS) Yayasan Alam Sehat Lestari (ASRI)
Countries	Indonesia, Southeast Asia
Risk/Gap Addressed	Gaps in policy architecture and in capacity building frameworks as illegal wildlife trade increases
Description	The project aimed to catalyse action by Indonesian policymakers to implement spillover prevention policies. To advance spillover prevention efforts and initiate policy reform, the project strengthened policymaker's understanding, promoted dialogue across government ministries and stakeholders, and enhanced coordination among regional actors. The project engaged directly with the legislative process in Indonesia and secured high-level government support. The spillover risk reduction agenda was refined, and best practices were shared through field visits. A targeted strategy was developed to influence global processes, supported by stakeholder mapping. Another aim was to raise awareness and support for spillover prevention measures among G20 leaders during and after Indonesia's G20 presidency. To achieve this, the project partnered with Indonesia's Alliance of Independent Journalists to train young reporters and published social media content to promote understanding and policy reform across Indonesia and Southeast Asia.
Links	Organisations: - Proactive Problem Solvers | Dalberg Catalyst | Washington - Saving Wildlife and Wild Places — WCS.org - Home | Preventing Pandemics - Alam Sehat Lestari | Health and Nature Conservation

Government official checking a python carried by a truck to one of the wildlife markets in North Sulawesi.
Photo © Dalberg Catalyst / Juan Robin

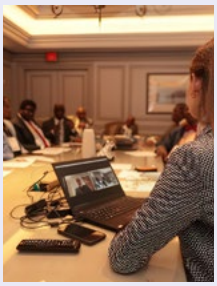
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Vietnam Country Package — Reducing Health Risks in the wild Animal Trade in Vietnam

Abbreviation	GIZ Vietnam
Implementing Organisation	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Vietnam
Partner Organisations	The One Health Partnership Secretariat under the Ministry of Agriculture and Rural Development
Country	Vietnam
Risk/Gap Addressed	Zoonotic spillover from wildlife farming
Description	This project supported the Vietnam component of the Nature 4 Health Initiative, aiming to reduce pandemic risks by strengthening environmental aspects of One Health. Among the focus areas was developing a strategy to reduce the use of snares, one of the main threats to Vietnam's terrestrial biodiversity — and curb the illegal trapping and trade of wildlife. The project also promoted ecological balance and raised awareness about protecting endangered species. As part of this effort, the project provided policy and technical recommendations to improve biosecurity in wildlife farming. A threefold approach was applied: conducting applied research, reviewing relevant policies, and facilitating multi-stakeholder advocacy. Research findings and policy insights informed each other and were shared through cross-sectoral platforms. The resulting recommendations emphasised the need for coordinated action among government agencies, local stakeholders, farmers, and international partners to effectively reduce spillover risks.
Links	Organisation: - Vietnam — giz.de Products: - GIZ Vietnam reports on project findings published — International Alliance against Health Risks in Wildlife Trade

Photo © GIZ Vietnam

Preventing Future Zoonotic Pandemics: Strengthening National Legal Frameworks and International Cooperation



Abbreviation	The ICCF Group
Implementing Organisation	The International Conservation Caucus Foundation (ICCF) Group
Partner Organisations	ADM Capital Foundation Legal Atlas Global Initiative to End Wildlife Crime
Countries	Angola, Botswana, Zambia
Risk/Gap Addressed	Need to improve zoonotic disease prevention and control
Description	The overarching goal of the project was to develop a model for improving legislation on the prevention and control of zoonotic diseases, to be implemented in three countries in southern Africa: Angola, Botswana, and Zambia. The project aimed to provide these countries access to additional knowledge tools (such as best legal practices, fact sheets, and legislative agendas), enabling them to independently draft or amend laws and enhance their ability to control zoonotic outbreaks. As part of the project, national laws directly or indirectly related to zoonotic diseases and wildlife trade were identified, summarised and further developed within the respective legal frameworks of Angola, Botswana, and Zambia. Complementing this effort, an institutional assessment, supported by in-country stakeholders, identified key national, regional, and international actors involved in zoonotic disease prevention related to wildlife trade.
Links	Organisations: - The ICCF Group - End Wildlife Crime — End Wildlife Crime - LEGAL ATLAS — Legal Atlas Home

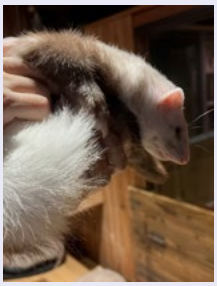
Photo © James Quinn Brantley, 2024

Mobilising IUCN Knowledge to Support the Development or Updating of WOAH Standards and Guidelines on Wildlife Disease Surveillance, Risk Assessment and Risk Management

Abbreviation	IUCN
Implementing Organisation	International Union for Conservation of Nature (IUCN)
Partner Organisations	World Organisation for Animal Health (WOAH) EcoHealth Alliance
Countries	Global
Risk/Gap Addressed	Strengthen the wildlife health component of One Health
Description	The project aimed to identify gaps in existing WOAH guidelines, develop and disseminate improved guidance, and raise awareness across the conservation sector as well as among governmental environmental and wildlife authorities. In particular, the project aimed to develop focused guidelines on spillover risks from wildlife trade and to support joint public outreach by IUCN and WOAH. As part of the project, IUCN and WOAH published general guidelines for surveillance of diseases, pathogens and toxic agents in free-ranging wildlife. The guidelines were created to support national wildlife health authorities, including WOAH National Focal Points, Indigenous Peoples, local communities, private landowners, and park managers in developing and implementing national wildlife disease surveillance programmes. Additionally, they were intended to promote a common understanding, which can serve as a foundation for training and operational procedures.
Links	Organisations: - IUCN - Home — WOAH - World Organisation for Animal Health - Scientific Research and Pandemic Prevention — EcoHealth Alliance Products: - General Guidelines for Surveillance of Diseases, Pathogens and Toxic Agents in Free-ranging Wildlife — WOAH — World Organisation for Animal Health

Photo © IUCN / Kevin Smith

Breaking the Chain of Health Risks from Wildlife Sources in China



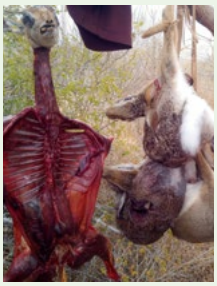
Abbreviation	WCS China
Implementing Organisation	Wildlife Conservation Society (WCS) China
Country	China
Risk/Gap Addressed	Policy recommendations to address spillover risks in wildlife trade
Description	The project aimed to strengthen government regulatory and surveillance authorities to help reduce the likelihood of future pandemics originating from wildlife-related zoonoses. To achieve this, the project focused on reviewing and assessing existing policies, to formulate policy recommendations that enhance the systematic implementation of the One Health approach. In the course if this work, more than twenty-five national laws and regulations (e.g., the Wildlife Protection Law, Animal Disease Prevention Law, Biosecurity Law, Postal Law, and Panel Code to Policy on Wild Animal Disease Health Inspection, and Regulations on the Administration of Registration of Market Entities) were reviewed, leading to policy recommendations to mitigate the zoonotic spillover risks.
Links	Organisation: - WCS China

Photo © WCS China

Pathogen Discovery / Law & Regulation *(hybrid)*

TRAFFIC

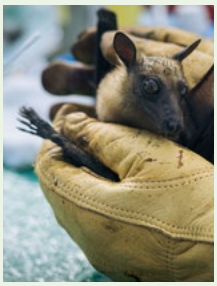
Reducing Risks in Tanzania's Game Meat Industry: Developing a One Health Model for Safe, Sustainable and Legal Supply



Abbreviation	TRAFFIC International
Implementing Organisation	TRAFFIC International
Partner Organisations	Wildlife TRAPS Project, IUCN, IIED, University of Edinburgh, Tanzania Wildlife Management Authority (TAWA), Tanzania Veterinary Laboratory Agency (TVLA), Tanzania Meat Board (TMB), the Game meat Selling Advisory Committee (GMSAC), Veterinary Services Division, The One Health Coordination Desk under the Prime Minister's Office, Tanzania Wildlife Farmers' and Game Meat Sellers' Association (TAWIFAGAMSA), Sokoine University of Agriculture (SUA), Nelson Mandela African Institution of Science and Technology.
Country	United Republic of Tanzania
Risk/Gap Addressed	Disease risks in the game meat supply chain
Description	In Tanzania, a regulation was issued in 2020 that legalizes and regulates the sale and handling of wild animal meat. The aim of the project was to support the implementation of the regulation. As a first step, the One Health collaboration identified important zoonotic pathogens associated with wild animals harvested and traded for game meat consumption. Next, the project addressed risks in the game meat value chain through a systems-based management reform. This reform, led by the National Game Meat Selling Advisory Committee, included revising meat inspection regulations to cover wild animal meat prior to its sale through registered game meat selling facilities. Increasing consultation with veterinary officers at meat facilities before sale reflected the positive impact of the project's awareness efforts on health risk reduction.
Links	Organisations: - TRAFFIC | Trade in Wild Species - Wildlife TRAPS — TRAFFIC — The Wildlife Trade monitoring network - IUCN - Home | International Institute for Environment and Development - The University of Edinburgh - TAWA | home - TVLA | Home - TMB | Tanzania Meat Board (TMB) - Home - Sokoine University of Agriculture - The Nelson Mandela African Institution of Science and Technology (NM-AIST) Products: - From Bush to Butchery: The Game Meat Value Chain in Northern Tanzania — Wildlife Trade Report from TRAFFIC - A simple, collaborative prioritization process for wildlife-associated zoonotic diseases in northern Tanzania

Photo © TRAFFIC International

Preventing the Next Pandemic: Human and Wildlife Health Monitoring and Formulation of Best Practice Guidelines and Inclusion of Health Indicators in Development Planning



Abbreviation	UNEP
Implementing Organisation	United Nations Environment Programme (UNEP)
Partner Organisations	Wildlife Conservation Society (WCS) Global Environmental Facility (GEF) National Institute of Health (NIH) Bernhard Nocht Institute (BNI)
Country	Democratic Republic of the Congo
Risk/Gap Addressed	Health standards for financing large scale development project
Description	The project aimed to monitor human and wildlife health by analyzing data to better understand the link between habitat change and the emergence of diseases. In addition, the project sought to develop best practice guidelines for great ape conservation — engaging lending banks and the private sector. This area of action focused on establishing and refining criteria to consider the spillover effect of relevant pathogens in investment projects within great ape habitats, particularly those funded by development banks, including the International Finance Corporation (IFC). The project leveraged ICF's inclusion of great apes in its biodiversity standards to guide development planning by lending banks and the private sector. It also reviewed ICF's performance standards related to health and initiated discussions on revising existing health indicators to better mitigate disease risks for both humans and wildlife as well as the threat of epidemic and pandemic outbreaks. The IFC Performance Standards are applied by more than 150 organisations, including Equator Principles signatories, export credit agencies, and development finance organisations.
Links	Organisations: - UNEP — UN Environment Programme - Saving Wildlife and Wild Places — WCS.org - Home | GEF - National Institutes of Health (NIH) | Turning Discovery Into Health - Bernhard Nocht Institute for Tropical Medicine

Eidolon helvum bat sampling at Brazzaville in 2022 (IHA project activity).
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Glossary Operational Manual Charter