ROADMAP TO END PANDEMICS

Building It Together

END PANDEMICS

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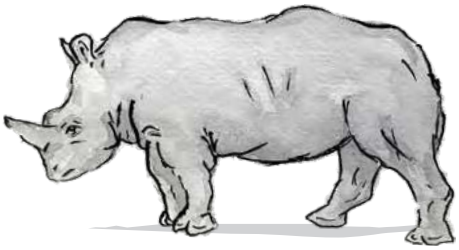
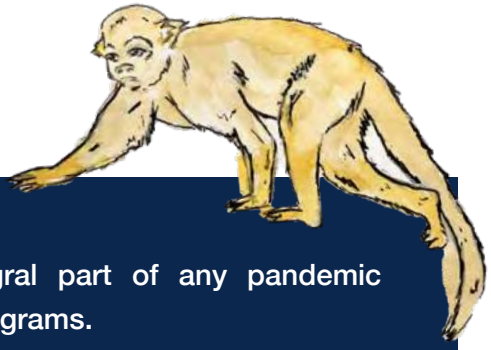


I. PREVENTING THE NEXT PANDEMIC

Takeaway Messages for Governments, Corporations, Civil Society, Individuals

- There is no greater cause in our lifetime than preventing the next pandemic.
- No-one is safe from pandemics until everyone is safe. We all have a role to play in our global recovery and transformation to create a safer and more resilient world.
- No matter what theory you subscribe to, COVID-19 is a zoonotic disease, now spreading from person to person. We know the triggers of such outbreaks, so we can mitigate the risks of their recurrence.
- The main triggers for zoonotic outbreaks are destruction of wild habitat (often for unsustainable agriculture) and commercial trade (legal and illegal) in wild animals.
- Banning commercial trade in wild animals, transforming our food supply systems, and prioritizing nature protection are the main components of a Planetary Health investment plan that will drastically reduce the risk and intensity of future zoonotic outbreaks.
- Prevention is far less expensive than reaction: A Planetary Health investment plan centered on prevention would cost less than 1% per year of what it is costing the world to fix the pandemic damage.



- Prevention must be an integral part of any pandemic recovery and preparedness programs.

- Prevention must include community actions, changes in public policies and laws, business practices and consumer behaviors.

- A ban on commercial trade in wild animals does not ban subsistence hunting. They are different things.

- A ban on commercial trade in wild animals will not increase poaching or trafficking. Enforced, a ban would decrease the volume of trade, thereby reducing threats to both biodiversity and people.

- A transformation from intensive agricultural practices to agroforestry and agroecological approaches results in sustainable soil, crops, and communities, and yields safer and healthier food.

- There are 11 specific things individuals can do to help prevent pandemics.

- The *EndPandemics* alliance is ready to help implement local, national, regional and global plans to prevent pandemics.

II. WHY Why This Roadmap and How to Use It

Having caused more destruction and disruption than any terrorist act or natural disaster in the last 100 years, COVID-19 has shaken our world and convinced the global community that we must do all that we can do to prevent another pandemic. But how? What exactly can we do to help avert a new catastrophic outbreak? Regenerating our world requires a regenerative approach, which is laid out in this Roadmap.

This multi-language Roadmap is a living, interactive tool designed by *EndPandemics* for governments, organizations, corporations, civil society, and individuals across the globe, providing concrete, practical guidance on how to prevent the next pandemic.

There is no greater cause in our lifetime. Everyone has a role to play in our global recovery, which, if implemented the right way, will result in a more just and sustainable world that greatly reduces the risk of another pandemic.

Through most of the COVID-19 pandemic, the world's focus has been on repairing damage already done, through vaccine rollout and unprecedented economic recovery packages. But instead of reactive, we need to be proactive. How do we PREVENT the next outbreak and avoid even more disruption and destruction of lives and economies? This Roadmap answers that question by explaining how pandemics start, and how to stop them from happening in the first place.

"*EndPandemics* is a "Collaboratory" with expert practitioners creating a formula, or "Roadmap" for a lasting vaccine, which we share in the following pages."

EndPandemics is a "Collaboratory" with expert practitioners creating a formula, or "Roadmap" for a lasting vaccine, which we share in the following pages.

We invite you to review and use this Roadmap, and to join the vibrant global community that created it, as we continually refine and jointly implement solutions. You can draw upon the power of a global movement to chart your own solutions that fit your particular circumstances, needs, and local context. This Roadmap can guide and empower you, those around you, and those who depend on you, to start on the path out of this self-inflicted Pandemics Era, and into a more secure world.

Whether you are a lawmaker or a government official, a community organizer or a "One Health" or "One Welfare" professional, a policy advocate or an international negotiator, a business owner or a fund manager, a farmer or an academic, a technology guru or a media editor, a think-tank researcher or a monitoring officer, or simply a concerned individual – this Roadmap contains practical information regarding the human drivers of pandemics, and how we can all team up to prevent a new one, while creating a safer, healthier, and more equitable planet.

This roadmap serves as a shared asset of *EndPandemics*, a global campaign alliance started by a diverse group of solution-oriented practitioners in early 2020 at the onset of the COVID-19 pandemic. *EndPandemics* aims to prevent future pandemics by addressing their root causes and investing in planetary health.

As the world tries to control the pandemic and recover from its disastrous social and economic impacts in an ongoing race against its mutations, *EndPandemics* focuses on

promoting and scaling up pandemic prevention solutions. These solutions are crucial to any recovery and preparedness actions by governments, businesses, or consumers.

The roadmap is an open tool; you do not have to be an *EndPandemics* participant to make use of it and help in its development and growth.

- Please take a few minutes to read this document.
- Explore a sampling of projects that are helping to prevent diseases in our Solutions Map in Appendix 1 (and browse through our online solutions database for more real-life solutions from those on the front lines around the world).
- Submit your own solution to the Solutions Map and enjoy the interactive support of the *EndPandemics* alliance, to attract global attention and support to make it more bankable.
- Engage with the alliance's communities of practice to expand, shape, strengthen, and promote replicable solutions, monitor and verify their impacts on the ground, and reward progress.
- Have a hand in shaping the future of Earth-positive impact investments by developing the *EndPandemics* Solutions Exchange.

The more people and organizations that use their diverse backgrounds, skills, and goals to implement, build upon, and use this Roadmap – the more useful and powerful it becomes for everyone.

Thank you.

EndPandemics Alliance

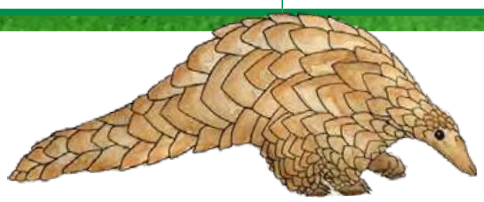
https://EndPandemics.Earth

ACKNOWLEDGEMENTS

This document was developed by members of the ***EndPandemics*** campaign alliance. Steven Galster and Andrey Kushlin were the principal authors and editors, with significant inputs by Marc Eberle, Bruno Laporte, Alan Laubsch, Roger Leakey, Sophie Le Clue, Niall McCann, Christina Scaringe, Courtney Vail and Amy Van Nice. Cecilia Fischer and John Scanlon peer reviewed the draft and provided critical insights that helped greatly improve the narrative. The document design and layout were produced by Luxana Kiratibhongse, with illustrations by Olivia Millard.

Why Should I Engage with *EndPandemics*?

IF I AM A:	WHAT'S IN IT FOR ME:
Concerned Individual	Join a vibrant community and help the world
Local Community / Social Entrepreneur	Grow visibility and market value of my solution
"One Health" Agency Practitioner	Connect my local partners to best peer practices
Legislator / Policy Advocate	Validate my policy proposal and gain local buy-in
Government Official	Find credible pilots for my new program delivery
International Organization (IGO/NGO)	Expand my access to local knowledge and partners
Donor / Charity Manager	Increase my pipeline of high-impact projects
Business Executive	Test my new product/service and gain local buy-in
Technology Platform / Fintech Startup	Test my new tool and expand my app ecosystem
Monitoring & Verification Officer	Validate and expand my observation protocols
University / Think Tank Researcher	Harvest empirical data for applied impact studies
Media / Creative Agency Editor	Harvest stories that resonate with wide audiences



EndPandemics Participants to Date

Academia Sinica

ACTAsia

ADM Capital Foundation

ALERT

Animal Defenders International

Animals Asia Foundation

Ark Ventures

AsiaWorks

Asociación de Becarios de Casanare

B.Grimm

Big.tc

Blood Lions

Blue Sphere Media

Born Free Foundation

Born Free USA

Catalyze

China Biodiversity Conservation and Green Development Foundation

David Shepherd Wildlife Foundation

EarthPulse

Education for Nature Vietnam

Endangered Species Coalition

Endangered Species Protection Agency

EndTheTrade

Environmental Investigation Agency

For the Animals

Freeland

Fundación Entropika

Generation Blue

Global Ocean Trust

Global Regeneration CoLab

Global Tiger Forum

Green Consumers' Foundation

GreenRope

GTI Council

Hemp for the Future

Humane Society International

Hyphae

International Fund for Animal Welfare

International Tree Foundation

Lancaster University

Land of the Leopard National Park

Leadership Knowledge Learning

Liberia Chimpanzee Rescue & Protection

Mememememeshop

Michigan State University

Muktir Bondhon Foundation

National Park Rescue

Norwegian Yacht Voyages

Ocean Conservation Trust

Oceanic Preservation Society

Open Hearts Foundation

PawPAC

Peace Journey

Planetary Health Alliance

PRC Global Pte Ltd

Project Coyote

Rede Latino-Americana de Ministerio Publico Ambiental

Regen Network

Save Wild Tigers

SEEDS

SmartAgro

Solidaridad Network Central America

Sumatran Tiger Project

Task.io

The Corbett Foundation

The Land App

Third Avenue Business Improvement District

Threefold.io

Transparent World

Victoria Falls Wildlife Trust

Voices 4 Biodiversity

WildAid

WILD Foundation

Wilderness Foundation Global

Wildlife Alliance

World Agroforestry

World Animal Protection

Worldview International Foundation

World Youth Wildlife Summit

III. CAUSES

How Do Pandemics Start?

The World Health Organization (WHO) sent a team to China in early 2021 to look for clues of what caused COVID-19. The team concluded that the most likely theory is trade from a wildlife farm to a wild animal section of a commercial wet market. The team determined the least likely theory was that the virus sprang from a laboratory. Whether the source turns out to be a wildlife-breeding farm, a wet market selling wild animals, or a lab that tests on wild animals, the consensus remains that the origin of the virus was a wild animal. Therefore COVID-19 is—like so many previous outbreaks before it—another zoonotic disease, now spreading from person to person.

> "The Pandemics Era is a crisis that was caused by, and can be solved by, humans."

We do not need to wait for more lengthy findings to act. The evidence of viral zoonotic risk is extensive and predates our current crisis. Imagine a group of inspectors going into a fuel depot that exploded, looking for clues, discovering a cigarette pack on the ground. They could take years to determine which cigarette – or other factor – caused the explosion. But you can be sure that as the depot was rebuilt and reopened, the no-smoking regulation would be strictly enforced. We need to rebuild our world with similar precautions. COVID-19 was a viral bomb. And we already know the triggers.

Specifically, the two major triggers of zoonotic outbreaks have been (1) destruction of wild habitats, largely for intensive agriculture, livestock ranching, and natural resource extraction; and (2) commercial trade in wild animals. The former ***pushes*** wild animals out of their natural homes, into close contact with humans and domesticated animals. The latter ***pulls*** wild animals from their natural homes and into close contact with people and other animals.

In both cases, a distressed animal can shed a virus that makes its way to a person who lacks an immune response. When this happens, a zoonotic outbreak or a full-blown pandemic may be born. Those same factors triggered HIV, Ebola, SARS, MERS, H5N1, and before that, the Plague, among others.

Novel infectious diseases regularly come from nature. However, so do many cures and products that make our lives easier. Hence, nature itself is not the problem. The Pandemics Era is a crisis that was caused by, and can be solved by, humans (see Box 1). These diseases rarely become epidemic or pandemic where nature's balance is undisturbed.

To soften the impact of human interference with nature, we must address the root causes—also known as "triggers"—of pandemics.

PANDEMIC TRIGGER 1: WILD HABITAT DESTRUCTION

Unsustainable farming practices that clear wild habitat, or artificially and intensively breed wild animals, lead to ecosystem disturbance and dysfunction. Zoonotic disease risk increases when natural ecosystems are disturbed. In nature, species that thrive and proliferate in disturbed habitats—such as bats, rodents and primates—often carry a high viral load. Harming or removing these species from their natural habitats pushes these animals into nearby communities or farms, where they may introduce viruses to domesticated animals or to people.

PANDEMIC TRIGGER 2: COMMERCIAL TRADE IN WILD ANIMALS

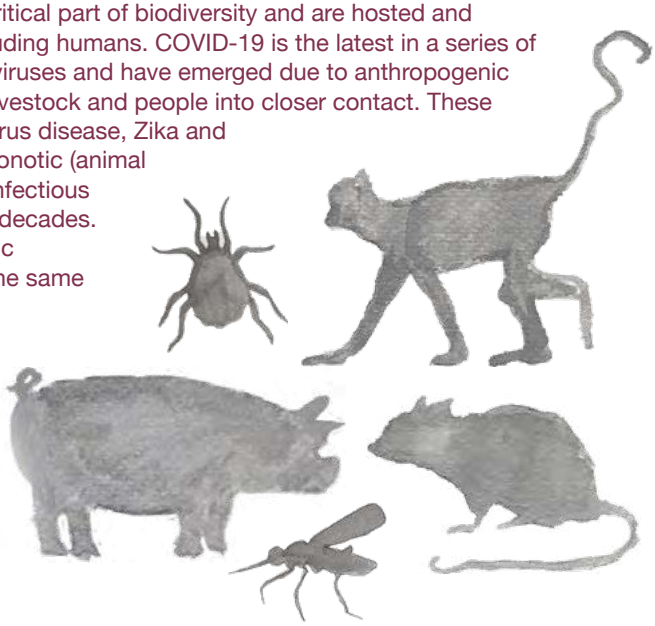
Taking wild animals from their natural homes – alive or dead – and bringing them to markets for sale is another efficient way to transmit

zoonotic viruses to human populations. Rising demand for wild animals in some countries has given rise to "wildlife farms", which breed exotic species for sale to the same urban, border and online markets, adding to the risk of virus transmission. Transport, confinement, lack of animal welfare standards, and other known stressors associated with wildlife trade make the animals vulnerable to disease and more likely to shed and transmit viruses.

Wild animals play critically important roles in our ecosystems. If we can learn to understand and respect the benefits to people by protecting wild animals and wild lands, we will all be safer. Trade them or destroy their homes, and these animals become potential sticks of dynamite.[1]

Box 1: ROOT CAUSES OF PANDEMICS

The emergence of COVID-19 in late 2019 as a major global pandemic is part of a pattern of disease emergence that highlights linkages between biodiversity, global environmental changes, and human health. COVID-19 and other pandemics are rooted in biodiversity. They are caused by microorganisms that are themselves a critical part of biodiversity and are hosted and transmitted by diverse animal species, including humans. COVID-19 is the latest in a series of diseases that are caused by wildlife-origin viruses and have emerged due to anthropogenic environmental changes that bring wildlife, livestock and people into closer contact. These diseases include SARS, Ebola and Nipah virus disease, Zika and influenza, and reflect a predominance of zoonotic (animal origin) viral diseases among the emerging infectious diseases affecting people over the last few decades. Over the past few years, a series of scientific papers have been published that suggest the same environmental changes that threaten biodiversity loss on a global scale (e.g., land use change, such as deforestation, degradation, or encroachment into wildlife habitat; climate change; unsustainable trade and consumption of wildlife; agricultural intensification; globalized trade and travel) are driving the increasing spillover, amplification and spread of these novel viral diseases.



Source: IPBES, 2020.[2]

1 Some experts will claim that not all commercially traded wild animals pose a risk of dangerous virus transmission to people. *EndPandemics* takes a "precautionary approach", recognizing that there are 1.7 million viruses in nature, at least half of which can cause serious threats to human health if we disturb the balance of nature. Scientists are still learning about these viruses. Our definition of "wild animals" does not include fish or such marine fauna as corals because the risk of dangerous, pandemic-level virus transmission associated with them is negligible. But it should be noted that many fish species are threatened with extinction by over-exploitation. And that is a reminder of the importance of the threat that commercial wildlife trade poses to earth and its people.

2 https://www.ipbes.net/pandemics.

IV. CURES

How Do We Stop Pandemics from Recurring?

To prevent future pandemics, we must address their root causes. We must follow the precautionary principle to disrupt viral emergence as early as possible (see Box 2). There will be an initial financial cost to changing our relationship with nature. But the economic argument favors transformational change. The global bill thus far for COVID-19 makes clear that pandemic prevention is an insurance policy for the planet that costs a tiny fraction of inaction.

The estimated cost of COVID-19 related economic damage and recovery efforts is US$11.5 trillion as of this writing. US$5 trillion has been wiped off the global economy in 2020 alone. The estimated global cost to significantly reduce the chance of another pandemic is US$26.6 billion per year for the next 10 years.[3] That is just 2% of the estimated total cost of COVID-19, or 0.2% per year. Most of this cost would be offset by the ancillary benefits of investing in nature,

Box 2: PREVENTING AN EMERGING DISEASE

There is nothing new about the wisdom of prevention being the mother of cure. Brushing your teeth beats a visit to a dentist. Wearing your seatbelt beats a bloody road accident. Fireproofing your home beats the devastating loss of lives and property to a fire.

It is always cheaper to invest in preventing predictable damage than to pay for post-damage response and recovery. Incentives are clear, and the world's vast and successful insurance industry is built upon this basic premise.

The same logic applies to emerging diseases (see Figure 1). Anticipation and primary prevention of new disease spillovers at their source (land degradation and destruction, intensive agriculture, wildlife trade) has proven to be more cost effective than after-the-fact detection and containment of even localized disease transmissions. Furthermore, this approach is several orders of magnitude less costly than disease outbreak control, mitigation and recovery measures in the event of epidemics or pandemics.

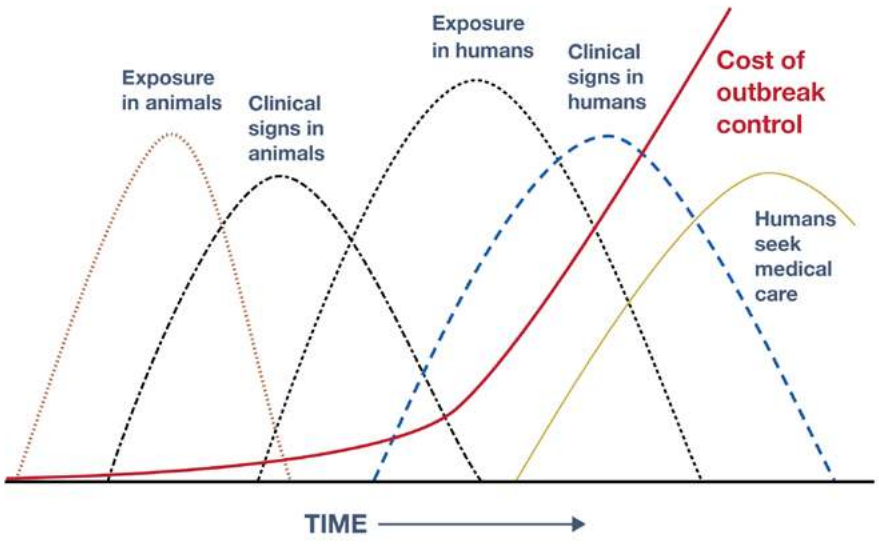


Figure 1. Economic rationale for primary prevention of pathogen spillovers at their source (deforestation, agriculture, wildlife trade). Adapted from IOM, 2009.

including carbon sequestration, natural disaster mitigation, community food security, local jobs and livelihoods, and more.

While the current spending surges tend to target pandemic recovery and preparedness measures, they can easily fund pandemic prevention programs. Investing in prevention is the economically responsible policy approach (see Box 3).

To sustain full-scale prevention long-term will require incentives. The good news is that expertise and incentives are available.

Box 3: THE COSTS OF PREVENTION VERSUS INACTION

An early COVID-era assessment of the economics of pandemic prevention quoted above (see Figure 2) has penciled total projected damages[4] from COVID-19 at up to US$15.8 trillion. This same study calculated ten years' worth of proposed prevention measures – including an extremely ambitious and costly item of "ending wild meat trade in China" – to be about 2% of current total COVID-19 related costs.

Although these early projected pandemic damages and prevention costs are likely underestimated, and will continue to be revised, they give a good indication of the steps that lie ahead. These economic analyses underscore the need to act; there is no excuse to delay obvious prevention actions for endless efficiency studies.

By building resilience to a variety of shocks – economic, social, climate, or health-related – countries, organizations, and firms can avoid diverting scarce resources to repeated cycles of shock, restructuring, recovery, and rebuilding (World Bank, 2021).

The economic rationale for strong and steady spending on pandemic prevention is now clearer than ever before in our history.

Our investments in pandemic prevention will also carry important direct benefits towards our key goals in biodiversity conservation and climate change mitigation.

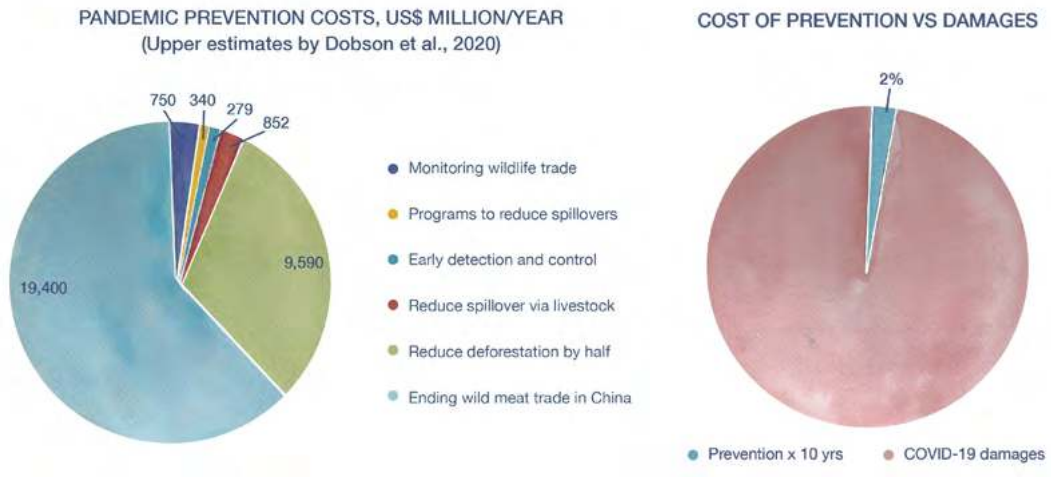


Figure 2: Estimated COVID-19 damages versus prevention costs. Data from Dobson et al., July 2020.

3 Dobson et al. (2020). https://science.sciencemag.org/content/369/6502/379

4 Including global mortality and GDP losses, but excluding the rising tally of morbidity, deaths from other causes due to disrupted medical systems, and the loss to society of foregone activities due to social distancing.

V. HOW TO FIX

Components and Costs of a Pandemic Prevention Plan

EndPandemics refers to the 4 components of an effective pandemics prevention plan as "Action Pillars", which include:

- **Action Pillar 1:** Reduce Demand for Wild Animals
- **Action Pillar 2:** Phase Out Commercial Trade in Wild Animals
- **Action Pillar 3**: Protect and Restore Natural Habitats
- **Action Pillar 4:** Make Our Farms and Food Systems Safer and Healthier

The following sections describe these 4 Action Pillars, followed by costs or steps to implement them.

REDUCE DEMAND

ACTION PILLAR 1: REDUCING DEMAND FOR WILD ANIMALS

Launch Government-Private Sector Behavior Change/Awareness Campaigns

These campaigns explain the rationale and urgency for the ban to gain public support for its implementation. They can include television, social media, school and community outreach.

Examples of good practices:

- Public-private sector behavior change campaigns aiming to reduce consumption of wild animals have been launched in China, Vietnam, Thailand, USA, UK, and some other countries. They use Key Opinion Leaders (including celebrities, government leaders, health experts, and others) to message target audiences via multiple platforms. Positive impact has been recorded.[5]
- Amend compulsory national curricula for primary and secondary schools to include lessons covering the importance of protecting wildlife and wild habitats for people. Link the risk of exploiting animals and the environment to the risks to public health.

Consumer behavioral change/awareness campaigns are vital, but they can take decades to achieve deep impact, especially if they are not coupled with clear laws and simple-to-implement enforcement.

STOP TRAFFICKING

ACTION PILLAR 2: PHASING OUT COMMERCIAL TRADE IN WILD ANIMALS

Ban commercial trade and consumption of wild animals

All commercial trade in wild animals—legal and illegal—carries the risk of virus transmission. Viruses do not discriminate between animals that are cleared for legal commerce versus those that are smuggled. SARS was linked to legal wildlife trade. African Horse Sickness (AHS), another zoonotic outbreak occurring around the same time as COVID-19, swept into Southeast Asia via legally traded zebras and killed over 90% of the horses it infected.

5 The USAID ARREST Program (2011-2015), USAID Wildlife Asia Program (2016-2020), and ongoing IFAW, WildAid, Wildlife Alliance, TRAFFIC, ENV-Vietnam, and Freeland Social Behavior Consumer Change activities in China, Vietnam, Thailand, while Wildlife Alliance and Freeland have been measured for impact. This data is publicly available on their websites, together with some reports and lessons learned about strategies.

Examples of good practices:

- China banned consumption of terrestrial wild animals in response to COVID-19, to prevent its spread or the recurrence of another outbreak.[6]
- Italy recently announced new trade restrictions and a ban on the import and trade of wild and exotic animals to reduce the risk of zoonotic outbreaks.[7]
- Vietnam's Prime Minister issued a Directive in July 2020 to ban imports and exports of wild animals until further notice, in response to COVID-19.

Opponents argue that such bans will force the trade underground and increase illegal trade in wildlife. Some also argue that such bans negatively impact poor or indigenous communities that may rely on hunting. These arguments do not hold up to wider analysis.

Some trade will likely go underground, but provided the ban is enforced, the number of dealers willing to risk doing business in a criminal market will be reduced. Similarly, the number of buyers daring to buy in the criminal space will also go down. An enforced ban would reduce overall volume of wild animals in trade, thereby reducing pressure on species populations, preserving biodiversity, and reducing the risk of zoonotic transmission. A clear ban also narrows the scope of enforcement for officers who target criminal dealers.

A ban on commercial trade in wild animals does not ban indigenous hunting/gathering by subsistence communities. These are completely different things.

Effectively phasing out commercial trade in wild animals will entail several steps:

- Create a timeline for the phase-out;
- Give legal wildlife dealers a deadline to accept a one-off financial compensation for transitioning out of the commercial wildlife trade;
- Partner with government and private sector wildlife care and rescue centers to ensure they are properly outfitted to accept and care for new animals that are forfeited by traders, while mandating the animals be neutered and the centers prohibited from breeding.

PROTECT NATURE

ACTION PILLAR 3: PROTECTING AND RESTORING NATURAL HABITATS

Over the last 60 years, the majority of new zoonotic pathogens have emerged, largely as a result of human activity including changes to land-use (e.g., deforestation) and the way we manage agricultural and food production systems (CBD, 2020).[8]

Land-use change is one of the leading factors contributing to zoonotic disease outbreaks. One of the major drivers of land use change is food production. Globally, approximately 40% of land use change is due to large-scale food production, and 33% is due to subsistence farming.[9]

As agriculture is expanding and human activity encroaches into wild habitat, wild species are in greater contact with humans and farmed animals, resulting in higher risk of disease spillover.

A well-connected and effectively managed system of inviolate Protected Areas is essential to protecting and conserving the integrity and intactness of natural ecosystems. Protected

6 China's revised wildlife law still allows for some wild animals to be bought and sold for medicines, and non-food purposes. Global experts in health and conservation are concerned that such allowance will create loopholes for dealers to exploit, leading back to resumption of trade. https://EndPandemics.earth/action-china-wildlife-protection-law.html

7 https://www.lav.it/en/news/ban-trade-import-wild-animals

8 Statement by CBD Acting Executive Secretary. https://www.cbd.int/doc/speech/2020/sp-2020-04-07-health-en.pdf

9 Food and Agriculture Organization of the United Nations. 2017. The State of Food and Agriculture. Leveraging Food Systems for Inclusive Rural Transformation. Rome. www.fao.org/3/a-i7658e.pdf.

Areas often span across international boundaries to provide connectivity of wild habitats. A new global consensus under the Convention on Biological Diversity (CBD) is emerging around the so-called 30x30 target to ensure that, by 2030, at least 30% of all land and marine areas are covered by effective protection.[10]

REFORM FARMING

ACTION PILLAR 4: MAKING OUR FARMS AND FOOD SYSTEMS SAFER AND HEALTHIER

The majority of current land use and agricultural practices are designed for mass food production to meet market demand and achieve food security. But these conventional practices have given rise to ecosystem degradation, global warming, unhealthy food supply chains, and virus transmission.

> "*EndPandemics* refers to the 4 components of an effective pandemics prevention plan as "Action Pillars"

Governments and the private sector must collaborate to promote agroecological practices (see Box 4), which sustain soil and healthy agricultural harvests, mitigate climate change, restore wild habitats, and reduce the risk of zoonotic outbreaks. Agroecology promotes functional biodiversity and nutrient cycling and is based on circular systems that mimic natural ecosystems. Agroecology can improve the livelihoods and autonomy of food producers even on a small scale. It draws on indigenous as well as farmers' knowledge and has the potential to transform social and political structures that are often times the root causes of the crises in the current food system.[11]

PAY NOW OR PAY MUCH MORE LATER

The convenient truth about the cost of a comprehensive 10-year pandemic prevention package is that it costs a tiny fraction of what governments and international aid agencies are spending to fix the damage from COVID-19, and to improve preparedness for the next outbreak. We can seriously reduce the risk of another outbreak by investing in prevention.

A prevention plan costs less than 2% of the total COVID-19 damages to the global economy (in other words, less than 0.2% per year). A fraction of current and planned recovery and stimulus packages can finance pandemics prevention. All that is needed is political commitment to prioritize prevention.

Costs and Steps of Action Pillar 1: Reducing Demand for Wildlife

Changing or creating laws and policies does not cost a lot of money. It takes political will. Financial resources and incentives, as well as effective communications, are needed to get society on board with legal and policy changes – then to be followed by effective implementation.

Consumer behavior change campaigns do cost money, but they are not expensive if conducted properly. The use of internet and social media to reach and impact consumers with effective market-tested messaging can result in positive impact. Campaigns are now being conducted in China, USA, Vietnam, the Philippines, and Thailand, where costs and impact data are available for sharing. Most campaigns are new, short lived or interrupted because the changes they are not yet institutionalized by governments. Private sector partnerships and donors have helped, but the impact and sustainability of such campaigns need official institutionali-

10 See Target 2 in CBD/SBSTTA/24/3: "By 2030, protect and conserve through well connected and effective system of protected areas and other effective area-based conservation measures at least 30% of the planet with the focus on areas particularly important for biodiversity."

11 IRAM 2020. Agroecology and safe food system transitions. Feasibility study, p. 8.

Box 4: AGROECOLOGICAL PRACTICES

Agroecological practices are based on the ecological functionalities of agroecosystems, the optimization of natural processes, and the sober management of resources. The aim is to make maximum use of nature as a production factor while maintaining and supporting its regenerative capabilities. Agroecology thus encompasses a variety of practices from the plot to the landscape: water management, soil fertility management (composting, soil cover, crop rotations and crop succession, etc.), crop protection (integrated pest management, natural pesticides, etc.), and landscape management (terrace cultivation, crop rotation, crop-livestock integration, agroforestry, etc.).

However, agroecology cannot be reduced to technical management practices. It represents a redesign of current production and processing systems, and a rethinking of all food systems.

Agroforestry is a mixed cropping system involving land-use systems and practices in which woody perennials are deliberately integrated with crops and/or animals on the same land management unit to initiate the creation of an agroecological succession.[12] In this way, new and old land use plans can be modified to re-boot subsistence agriculture in the tropics and subtropics.[13] By rehabilitating degraded farmland and restoring dysfunctional agroecosystems, it rebuilds wildlife habitat and natural capital in ways that are also farmer-friendly - by expanding and diversifying income streams - and climate-friendly - by restoring habitats and sequestering carbon. These processes are fundamental to reforming tropical and sub-tropical subsistence agriculture and industrial farming and minimizing the risks of new zoonotic disease transmissions to humans. Agroforestry is widely practiced in Asia, Africa and Latin America, but to be scaled up to a level that will have global impact on the drivers of deforestation (hunger, poverty and social injustice) requires donors and international development agencies to make a shift in mindset away from land clearance for monocultural crops and livestock.

Certain issues are specific to Southeast Asia:

- The replacement of natural vegetation by the main six agricultural crops of rice, cassava, maize, sugarcane, rubber and oil palm covers 80% of all agricultural land in the Mekong region.
- The agriculture sector contributes significantly to national GDP (38% in Myanmar, 23.4% in Cambodia, 25% in Laos, 15% in Vietnam) and employment (60% in Myanmar, 75% in Laos, 40% in Cambodia) as well as to a large rural population.[14]
- Increased pressure on agricultural landscapes and livelihoods already affected by climate change and natural disasters.
- The rapid ageing of the population, particularly in the agricultural sector, on top of accelerating migration into cities.

The accession of Cambodia and Vietnam to the “4 per 1000” initiative (www.4p1000.org) in 2019 is an example of the growing political interest in the sustainability of agricultural and food systems. The vast majority of countries in the region have action plans aimed at increasing adaptation to and mitigation of the impact of climate change and seek to reverse the cycle of land degradation of cultivated agroecosystems.

12 Leakey, 2014. The role of trees in agroecology and sustainable agriculture in the tropics. Annual Review of Phytopathology 52: 113-133.

13 Leakey, 2020. A re-boot of tropical agriculture benefits food production, rural economies, health, social justice and the environment. Nature Food 1: 260-265.

14 Ingalls et al., 2018. State of Land in the Mekong Region.

zation (via government policy) in order to scale. Such a policy should include change within the national education curricula, and this should be inclusive for every child. Teachers must be trained to deliver new curricula with key messages on protecting wildlife and avoiding pandemics. The youth are our future.

Costs and Steps of Action Pillar 2: Phasing Out Commercial Wildlife Trade

This measure can be implemented with a stroke of a pen. To ensure effective implementation, financial costs should be focused on (a) enforcement of a ban; and (b) one-off compensation to legal wildlife dealers so that they can transition to a new line of work.

> **"A prevention plan costs less than 2% of the total COVID-19 damages to the global economy (in other words, less than 0.2% per year)."**

Wildlife enforcement budgets are inadequate in almost every country in the world. Efficiency and resourcing of wildlife enforcement can be improved in these four ways:

(1) Simplifying national wildlife laws to make enforcement easier. Fuzzy or complicated laws result in more effort by enforcement and opportunistic corruption;

(2) Creating multi-agency, cross-border wildlife enforcement networks spreads the burden of work across agencies and countries to tackle transnational organized crime;

(3) Supporting a new protocol on wildlife crime under the UNTOC (United Nations Convention Against Transnational Organized Crime);

(4) Allocating more money to counter-wildlife trafficking.

Enforcement against illegal wildlife trade is often complicated by laws and regulations that allow trade in certain species under certain circumstances, dictated by a mix of national laws and adherence to international CITES regulations. Many officers do not know how to identify the thousands of species in trade, nor can they recall which species are allowed to be traded or not. A ban on all commercial trade in wild animals simplifies enforcement and saves resources.[15]

Interagency and cross-border wildlife enforcement networks (WENs) allow agencies and countries straddling the illicit wildlife trafficking supply chains to collaborate to dismantle syndicates (which are destroying and stealing over US$20 billion worth of biodiversity of CITES-listed species[16] every year), thereby saving time, money and lives.

One-off compensations to legal wildlife dealers must be conducted carefully, fairly and swiftly. There will be resistance, while some illegal dealers will get in line to receive their compensation, with intentions to continue an illegal business. Each government must decide what is a fair payment. A very small percentage of government and donor allocations for pandemic recovery can include this line item. *EndPandemics* partners are available to provide advice on the mechanics and costs of this challenging and sensitive, but important step.

Costs and Steps for Action Pillar 3: Protecting and Restoring Natural Habitats

A variety of biodiversity conservation investments will have a direct positive impact on reducing the risks of zoonotic spillovers, as well

15 *EndPandemics* definition of wild animals does not cover fish. In fact, many fish species are threatened by over-exploitation and should be protected, but they do not pose a pandemic risk. And to repeat: the *EndPandemics* call to ban commercial trade in wild animals does not mean a ban on indigenous subsistence hunting.

16 It is actually about US$200 billion worth for all species in trade that are not listed under CITES. See UNODC World Wildlife Crime Report 2020 and World Bank Report 2019.

as multiple other benefits related to climate change, security, jobs, and more. These targeted investments have been explicitly defined by the recent report of the Intergovernmental Platform on Biodiversity and Ecosystem Services.[17] They include:

- Frontline ranger & community patrols: training, equipment, life insurance;
- Poverty reduction programs: youth education & alternative livelihood support;
- Empowering rural communities to defend their land & human rights as protectors of nature;
- Restoring nature: growing protected areas, buffer zones, corridors & rewilding;
- Re-designing infrastructure & development projects, following the impact mitigation hierarchy, to avoid core wilderness areas wherever possible;
- Reducing pressures on natural forests and woodlands by initiating more sustainable farming practices that recreate functioning agroecosystems based on the production of domestically useful indigenous food and non-food products that also have potential to create new local markets and industries.

Costs and Steps for Action Pillar 4: Making Our Farms and Food Systems Safer and Healthier

Investing in a transformation from current industrial agriculture (including factory farming) to a more regenerative agroforestry and agroecological approach described above will require significant political will, effort and resources. But the return on such investment will be significant. The regenerative approach leads to:

- Cleaner food and healthier consumers;
- Healthier soil that can be used for generations, ensuring more stable, sustainable income;
- More resilient and prosperous local communities that benefit from sustainable livelihoods;
- Reduction in wildlife poaching and illegal habitat destruction because local communities are less dependent on these activities;
- Reduced risk of zoonotic transmissions due to minimal disruption of wild habitats.

17 IPBES (2020) Workshop Report on Biodiversity and Pandemics of the Intergovernmental Platform on Biodiversity and Ecosystem Services. https://ipbes.net/sites/default/files/2020-12/IPBES%20Workshop%20on%20Biodiversity%20and%20Pandemics%20Report_0.pdf

IV. GOOD PRACTICES

Policies That the Public and Private Sectors and Individuals Can Adopt

The following are policy guidelines that the public and private sectors and individuals can follow to do their part in preventing pandemics.

MODEL GOVERNMENT POLICIES/LAWS

One Health

The most efficient and impactful policy that a government can adopt to mitigate the risk of pandemic recurrence, while repairing earth's ecosystems, is **One Health**. It is a global approach that merges expertise, goals and resources in human health, animal health, and ecosystem health in order to detect and prevent emergence and spread of disease (see Box 5).

> "Companies and organizations, large and small, can adopt their own pandemic prevention policies and practices that will contribute to a local and global effort."

No one agency or sector of society alone can prevent the emergence or resurgence of diseases in today's globalized world. No one nation alone can reverse the patterns of habitat loss and extinction that threaten people and animals. Only by convening various agencies and civil society groups involved in human health and the environment in a comprehensive manner can we realistically detect, solve, and mitigate the spread of zoonotic disease.

While the idea behind this approach is not new, its implementation is new. The World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (OIE) and the United National Environment Programme (UN-Environment) are coordinating the development of One Health at the intergovernmental level. The parties to the Convention on Biological Diversity (CBD) are developing a Global Action Plan for Biodiversity and Health that would make One Health more biodiversity inclusive.[19]

To be effective, One Health needs to be properly institutionalized and supported both nationally and internationally, with adequate enabling conditions for its implementation at the ground level.

MODEL CORPORATE AND ORGANIZATIONAL POLICIES/ PRACTICES

The global economy has been dominated by extractive commercial practices that remove or damage natural resources. A regenerative approach ensures that natural resources will not be harmed, and if they are disturbed or removed, they will be replaced, increased, and protected. Companies and organizations, large and small, can adopt their own pandemic prevention policies and practices that will contribute to a local and global effort. These policies can include:

- Regenerative investments, production and sales;
- Deforestation-free supply chains;
- Wildlife-free supply chains;
- Loyalty programs (tokens, points, etc.) rewarding customers for protecting and restoring nature;
- Sponsorship of pandemic prevention activities and media campaigns; etc.

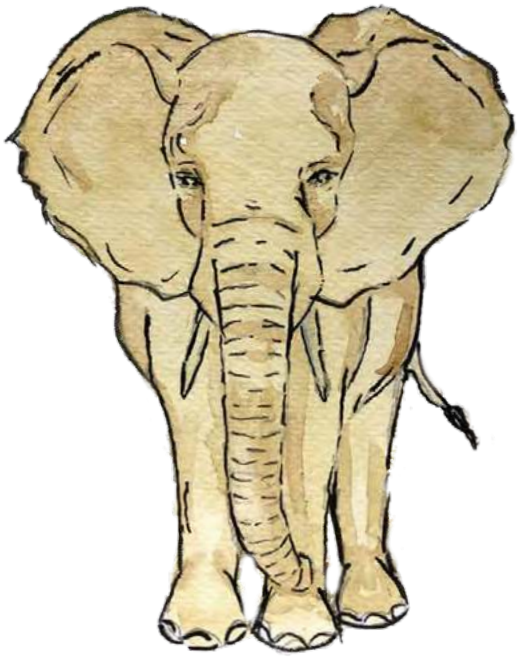
19 The CBD COP 15 in Kunming, China in October 2021 will consider the new Global Biodiversity Framework that would pledge, inter alia, to ensure that, by 2030, "the harvesting, trade and use of wild species of fauna and flora is legal, at sustainable levels and safe." It is important that the definition of "safe" in the Convention's new targets is aligned with the One Health approach, i.e., that it means "posing no risk of pathogen spillover to humans, wildlife, or domesticated species and posing no risk of becoming an alien invasive species."

MODEL INDIVIDUAL POLICIES/ BEHAVIORS

Many individuals feel helpless when fighting such a huge problem like a pandemic. But, in fact, there are specific actions that individuals can take that will have a positive impact, which can become exponential as we convince others to follow suit.

Here are 11 habits that individuals, families, or social groups can adopt to help prevent pandemics and make our world a better, safer, happier place:

1. **Eat less meat.** Some of the world's deadliest disease outbreaks have been tied to industrial animal agriculture.
2. **Don't buy fur or exotic animal skins.** Captive breeding farms are inhumane and are breeding grounds for disease transmission and laundering of illegally caught wildlife.
3. **Choose your wildlife tourism options carefully.** Tourist attractions that feature captive wild animals often remove these animals from their natural habitats and make them accessible to tourists, increasing the risk of zoonosis.
4. **Don't purchase wildlife products, souvenirs, or bushmeat when traveling.** Just because they may be for sale, does not mean their legal, safe, or ethical.
5. **Check the ingredients – Don't buy products created from deforestation.** The conversion of rainforest to pastureland and plantations increases risks for zoonotic spillover from wild animals to domesticated animals and humans.
6. **Don't keep exotic pets.** Contact with exotic pets puts owners at risk for exposure to zoonotic diseases, while harming wild populations.
7. **Be responsible on social media.** Social media activity is noticed by wildlife traders, so comments like "I want one" encourage them to remove wildlife from natural habitats to sell them.
8. **Minimize your carbon and waste footprint.** Support policies and businesses that embrace a "circular economy" approach – reducing the extraction of natural resources and minimizing environmental impact.
9. **Support rewilding and agroecological restoration of degraded land.** Rewilding is the large-scale restoration of natural ecosystems and productive agroecosystems in ways that allow nature to take care of itself.
10. **Invest in sustainable finance.** Use your savings and investments wisely to ensure that your financial choices are fully divested from fossil fuels and industries linked to deforestation.
11. **Vote for the planet. Make sure your elected** officials are representing you and the planet!



VII. THE URGENCY

The Time to Act is Now

No-one is safe against future pandemics until all are safe. A virus outbreak in one country, state, or city can spread to another, even in the face of costly lockdowns. Global cooperation is critical.

COVID-19 disrupted entire societies, regardless of beliefs or income levels. We ***can and must*** motivate everyone to join this global movement to prevent a new pandemic. ***The window of opportunity is now.***

Such a diverse and motivated alliance can create unprecedented power to force the necessary transformation from pandemic reaction to pandemic prevention in two ways:

- Fueling political will for the necessary wide sweeping reforms;
- Driving exponential growth of prevention solutions on the ground.

To convert this global crisis to a global opportunity that can fix and improve our world, mass social participation and collaboration is needed. Such collaboration is at the center of the alliance's impact delivery model (see Box 5).

> **"No-one is safe against future pandemics until all are safe... The window of opportunity is now."**

Box 5. ONE HEALTH AND THE POWER OF INCLUSIVE RECOVERY

Before COVID-19, we already knew the mantra that viruses do not need a passport to travel. We learned how fast and how far pathogens can spread in our interconnected world, not just from scary movies, but also from real-life health scares like SARS or Ebola. Still, the world largely viewed these frightening realities as medical emergencies, to be dealt with by capable health professionals.

In the wake of SARS and Ebola, the One Health[20] approach eventually added veterinary and ecosystem health experts to the joint effort of disease prevention and control.

A clear-eyed economist predicted[21] in 2013 that "pandemics are not mainly a health problem because they can disrupt the functioning of economies and societies." Now we all know how true this is!

The direct toll from COVID-19 on the millions who got hit by the disease, including their families and frontline health workers, is devastating. In fact, the entire world has been impacted.

Whether you are a stockbroker in New York, a truck driver in Brazil, a schoolteacher in Finland, a hotel owner in Egypt, a chicken farmer in Bangladesh, a restaurant cook in Australia, a park ranger in Zimbabwe, or a retiree in Spain, you will have already felt the pain of severe disruptions in your daily life, the loss of income and basic economic security caused by non-medical consequences of the pandemics.

"Rising inequality and the exclusion of different social groups from services, markets and opportunities impedes development and foments discord. Ensuring that the recovery does not leave anyone behind can reduce disparities in opportunities and outcomes and help excluded groups to realize a fair share of benefits. Including diverse perspectives and involving communities in the design of policies and investment projects by private and public sector entities can ease implementation challenges." (World Bank, 2021)

Hard-hitting policies and clever technologies will be essential, but not enough. Top-down change is linear, bottom-up change can be exponential.

20 https://www.who.int/news-room/q-a-detail/one-health

21 https://blogs.worldbank.org/developmenttalk/danger-pandemic

VIII. HELP AVAILABLE

How *EndPandemics* Can Help You

Developing and implementing your locally relevant pandemic prevention plan is no easy task. The *EndPandemics* alliance can help you, and you can help us.

The main approaches to pandemic prevention are:

- Reduce demand for wildlife;
- Phase out wildlife trade;
- Protect and restore natural ecosystems; and
- Make our farms and food systems safer and healthier.

None of these solutions are new. They have been applied, on and off, piece-meal, in different places and at different times. So, the know-how is there. *EndPandemics* is convening the expert practitioners and projects behind these 4 solution approaches to create a comprehensive "Solutions Map". We are continuously importing and exporting best practices to hone projects for maximum, positive impact.

To end the Pandemics Era, we need to switch the throttle of these prevention solutions from sporadic and isolated to nonstop, wall-to-wall coverage.

Scaling up delivery of solutions is commonly constrained, not by the lack of resources, but by the lack of bankable project ideas. This is in large part due to what businesses call the ***Last Mile Problem***.[22] Ambitious government policies, programs and projects perennially struggle, and too often fail, in delivering the intended impacts. They are not duly tasked, resourced or equipped to listen to their end beneficiaries, nor track in real time the impact of their interventions.

To tackle this challenge, we must reverse top-down solutioning that often cosmetically involves or co-opts local communities[23] and instead employ mass co-creation of solutions that ensures ownership and sustained implementation.

EndPandemics **(https://EndPandemics.earth), an open collaborative alliance of practitioners working for the common good, is generating a continuous flow of locally owned pandemic prevention solutions—community actions, changes in public policies, business practices and consumer behaviors—that are being openly reviewed, rated, exchanged and promoted for replication and scaling up by public and private investments.**

The *EndPandemics* alliance is engaging all interested individuals and organizations, big and small, from all sectors and geographies, to jointly grow the *EndPandemics* Solutions Map (see Figure 3). This Map is a tool to refine, match and market pandemic prevention solutions (see Appendix 1 for examples).

Solutions that are received and vetted, or created, replicated, and refined by the *EndPandemics* community then become building blocks of a global recovery and regeneration effort. These solutions are catalogued, with details of their innovator, costs and impacts, like an

22 It means that product delivery at the final stage of a B2C (business-to-customer) value chain tends to be most expensive, most time consuming and least reliable. Apart from delivery infrastructure improvements, the main two ways to tackle this problem in a business are communicating with customers and real-time delivery tracking to customers. Source: https://onfleet.com/blog/last-mile-problem.

23 This term fully refers to Indigenous Peoples and Local Communities (IPLCs).

investment platform. Shared lessons learned ensure that interested stakeholders can hit the ground running.

As the community grows, the value of each mapped solution also increases due to its higher visibility, public transparency, stronger impact verification protocols and social validation, as it is backed by the social capital invested by solution co-owners.

EndPandemics has established a Monitoring, Evaluation and Reward (MER) system that utilizes its own blockchain-based digital token (EPX) to track and reward effort and impact of the solutions.

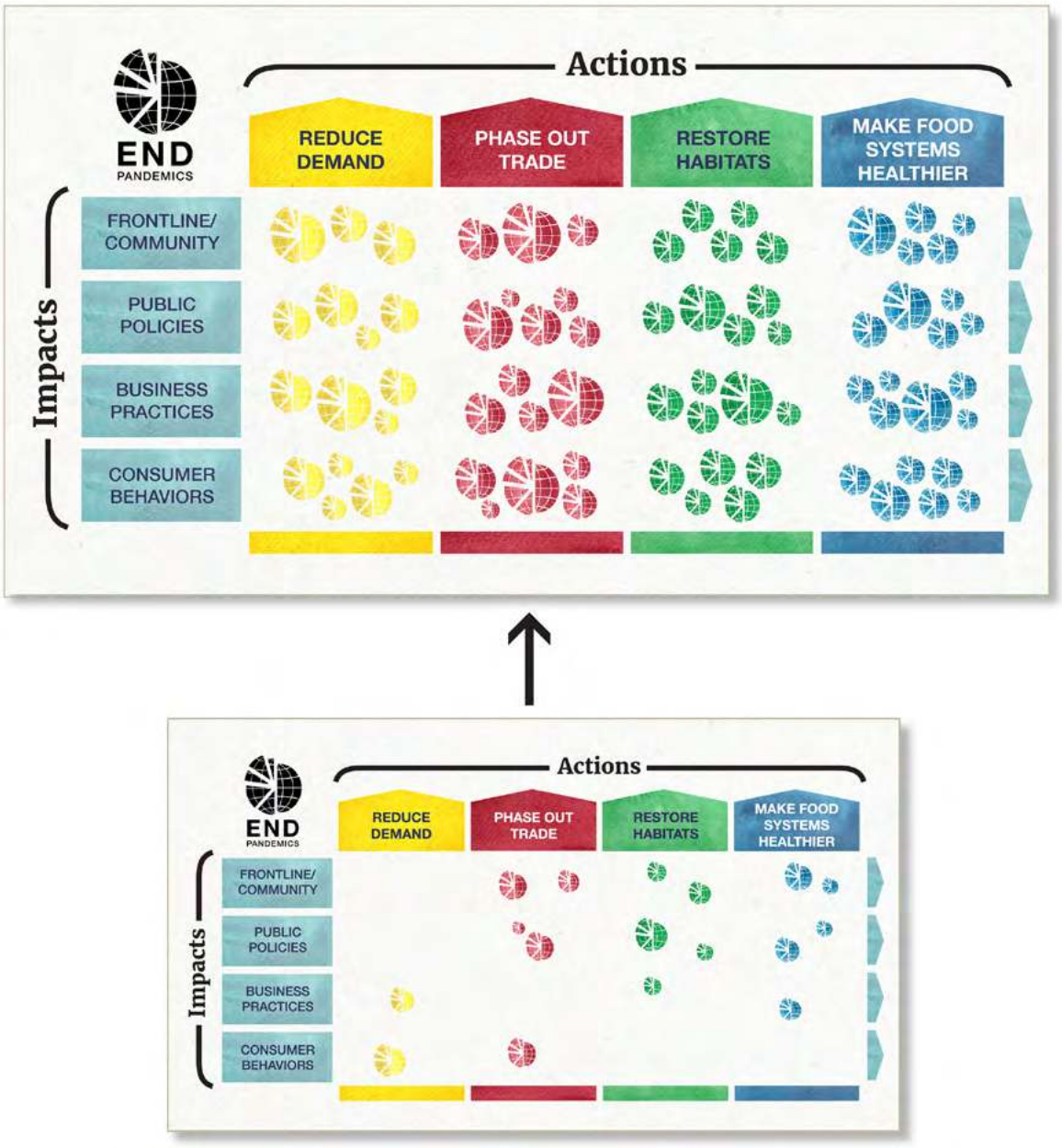
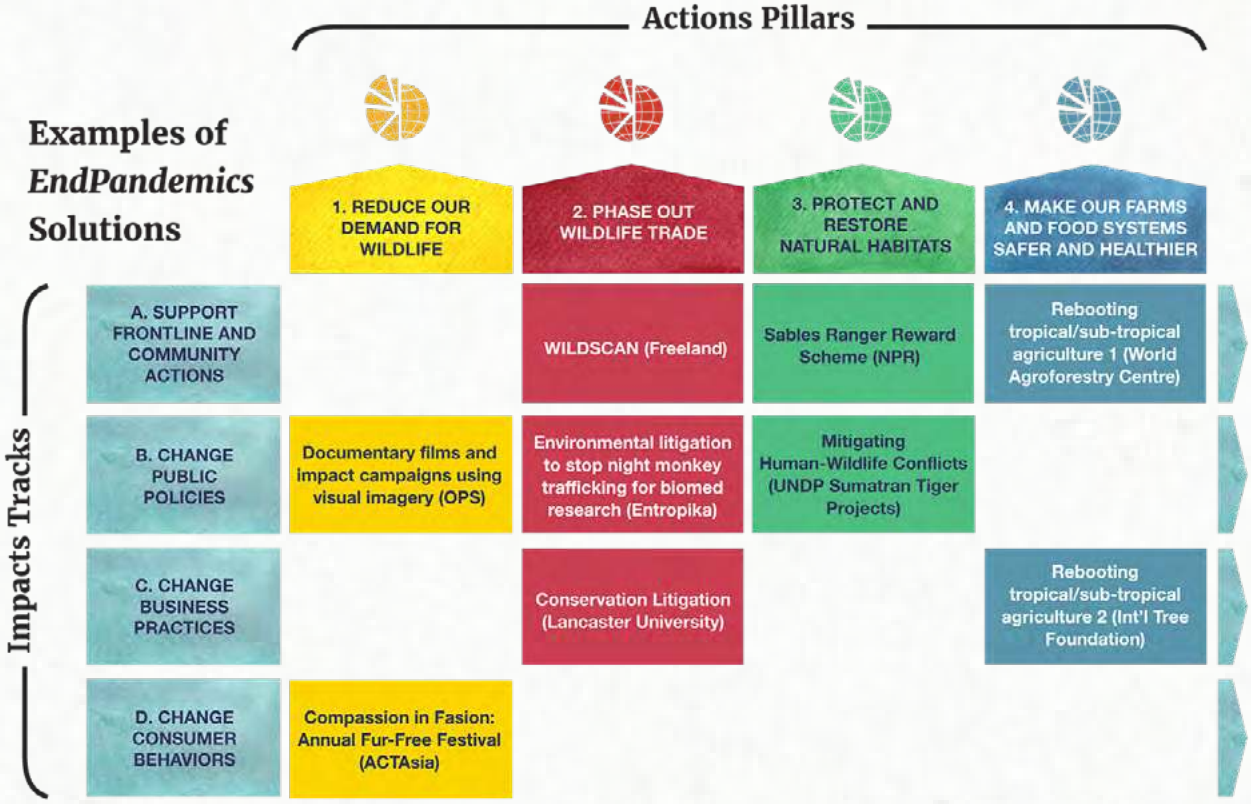


Figure 3. Growing the Solutions Map – from random interventions to lasting, wholesale changes.

APPENDIX

A Sampling of the *EndPandemics* Solutions Map



EndPandemics
Investing in Planetary Health


START WITH
ONE THING

DOCUMENTARY FILMS AND IMPACT CAMPAIGNS USING VISUAL IMAGERY

Location: Global

Solution Proponent: Oceanic Preservation Society

PROBLEM

OPS documentary films and projection events expose critical issues facing our planet, and the front-line defenders who are risking their lives to defend it, through compelling imagery and story-telling. *Racing Extinction* (2015) revealed the role that wildlife trafficking plays in contributing to the current mass extinction event, climate change, and humankind's important connection to, and reliance upon, nature. *The Game Changers* (2019) focused on the benefits of a plant-based diet for human health and reducing the environmental impacts of intensive animal agriculture which contributes to species extinction, deforestation, zoonotic disease transmission, and climate chaos. Our next film currently in production will expose the destruction of tropical ecosystems by the palm oil industry that is hastening wildlife trafficking, exacerbating climate change, and increasing the potential for future zoonotic disease outbreaks.

SOLUTION

Documentary film and impact campaigns using visual imagery (e.g. projections events).

Some of our films require covert operations and investigations, including infiltration of wildlife markets in Asia; others have required film crews to be embedded within field operations where our interventions have led to the confiscation of endangered wildlife or enforcement actions against illegal wildlife traders; interviews with government officials, scientists, and activists requires the establishment of trust; and partnerships with innovative technology companies have enabled some of our incredible projection events where we have illuminated iconic buildings, such as the Empire State Building and St. Peter's Basilica at The Vatican. These images of endangered species and other thematic content have reached millions of people globally and helped to raise awareness.

RESULTS

Our films have been met with varying success, including an Academy Award for the best documentary (2009 for *The Cove*). For other films (*Racing Extinction*), we partnered with high-profile multimedia companies (Discovery, Vulcan Productions, Obscura and others) to create an action website and impact campaign to channel interest after the film's release. Our projection events were strategically held in tandem with key meetings and partners (UN Climate Summit in September 2014 New York; and at the Vatican in early December before the Paris Climate Accord (Climate COP21) in 2015. With the intention of scaling social change and sparking an international dialogue, success is measured by the campaigns and partnerships spawned by these films and visual displays, the numbers of viewers reached, and who ultimately participates in some form of action (which is ultimately more difficult to track). Collectively, our global projection events have achieved over 5.3 billion impressions.

Beyond raising awareness, our documentary films have catalyzed action, including the abandonment of whale and dolphin meat in school lunch programs in Japan achieved a reduction in numbers of dolphins killed in the drive hunts each year; supported increased protection for shark and ray species at wildlife trade fora (e.g., CITES); and led to the confiscation of wildlife and arrest of traffickers (e.g., the closure of a high-end restaurant in Southern California serving endangered whale meat, and the rescue and release of an endangered orangutan discovered during covert filming operations). After the release of The Game Changers, the interest in plant-based diets escalated, with 'plant-based recipes' one of the biggest Google searches of 2019. While isolating the true impact of the film is difficult, a growing awareness around plant-based diets and their importance to the environment has exploded since the film's release.

LESSONS

A post-film impact campaign is essential to reaching, and activating, the largest audience over time. We did not have an action site with our first film (The Cove, 2009), but quickly learned that the impact campaign that follows a film or projection event is as important as the documentary itself. It is imperative to have a clear and tangible way to channel interest and inform action by the viewing public. Capitalizing on the inspiration of a film requires a long-term commitment to identifying opportunities to channel strategic action in the policy arena, field, or through recruitment of corporate partners and commitments.

OPS: OCEANIC PRESERVATION SOCIETY

OPS inspires, empowers, and connects a global community using high-impact films and visual storytelling to expose the most critical issues facing our planet.

LEARN MORE

Website
www.opsociety.org

Vimeo Page
https://vimeo.com/opsociety

Youtube page
https://www.youtube.com/channel/UCbbST1c7UWQBG-5GkgIOrt7A

Wildlife markets clip
https://www.youtube.com/watch?v=jx9VmRKB6wM

Educational outreach videos
https://www.opsociety.org/outreachvideos/

Our films
https://www.opsociety.org/our-work/

CONTACT

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COMPASSION IN FASHION: ANNUAL FUR-FREE FESTIVAL

Location: China

Solution Proponent: ACTAsia

PROBLEM

Indiscriminate consumption globally and in China is fueling unsustainable industries such as fur farming. In fur farming, disregard is shown for human welfare in terms of employment and safety, exploitation of animals and damage to the environment. The risks of pandemics are becoming clearer but as consumers, people continue to overlook the disconnect between individual actions and impacts to other people, animals and the environment.

The legal trade in fur is a starting point to tackle the trade in wildlife and prevent future pandemics. At the same time as ACTAsia works for a reduction in demand for wildlife as a whole, we aim to build a consumer mindset that understands compassionate choices and the destructive effects that excessive and indiscriminate consumption has on the world, from all of the One Health perspectives.

These choices such as fur in fashion fuel unsustainable industries and put human health at risk from toxic chemicals and the potential for pandemics.

The legal trade in fur is a starting point to tackle the commercial trade in wildlife and prevent future pandemics.

SOLUTION

Annual Fur-Free Festivals in Shanghai China have been held since 2014 usually during or close to Shanghai Fashion week Autumn/Winter. The Fashion Festival is made up of several components all aimed to keep the fur-free message in the mainstream media:

- Fur-Free Fashion Show (2020 Stella McCartney).
- Fur-Free Day for all visitors and exhibitors (3rd September at Fashion Zoo Expo in 2020).
- Sustainable and Fur-Free Forum to promote fur-free and alternative materials - with international experts and leading speakers in sustainability and the fashion industry.
- Opportunity to present Fur-Free Retailers (FFR) who commit to not use fur in their designs.
- Partnerships: in 2020 - Fashion Zoo, Stella McCartney, London College of Fashion, British Consulate, British Council, China Biodiversity Conservation Green Development Fund.

The Fur-Free Fashion Festival in 2020 reached close to 40 million people on social media with 500 attendees in person at the forum and 20,000 online streaming the event. The Fashion show pulled an online crowd of half a million people.

RESULTS

ACTAsia has been delivering the Fashion Festival in China for six years and has built up to 2020 where we have made the event offline and online, had international speakers join from around the world online and in person, and been able to pull in brands for sustainable fashion and in 2020 started to broaden the reach to consumers of plant-based diet including OATLY.

Held in China to include: Fashion Show, Forum and Fur-Free day.

Media pick up from 20 media agencies in China

Total reach for the event this year (2020) was close to 40 million people.

In ACTAsia consumer report 2020 we have found that a higher percentage of fur consumers will stop buying fur once they know about the practices in fur farms and more about the industry. This has increased from 65% in 2019 to 84% in 2020.

We measure success by the partnerships and strong political support that the Fur-Free message is within the larger sustainability discussion and has become mainstream – this has been a crucial goal that ACTAsia has been keen to work towards. ACTAsia has steadily built a robust and credible reputation in China and internationally through diligent research work and reporting on evidence and maintaining context and integrity within our

work. We have honoured partners and given credit where it is due, delivering what we set out to achieve.

Over the six years of Fashion Festivals, we have hand-picked key speakers who we respect and know they have something key and individual to bring to the forums, we have showcased fur free brands and maintained a positive message on consumer choices. ACTAsia avoids the radical or bandwagon approach and does not use aggression or finger-pointing tactics. Instead, we are non-confrontational, offering positive consumer choices and back up with the reasoning to explain and inform with benefits to people, animals and the environment.

Through the media we have become a called upon source for accurate up to date information, this is due to the approach we have taken to ensure we research and fact-check before sharing information with others. ACTAsia keeps the fur issue within mainstream media and have avoided being side-lined or tarnished as a 'radical' group that is then dismissed.

Promoting open and honest discussion and not condemning but celebrating small changes, not driving for perfection in consumer choices but showing that small changes can add up makes people feel they are willing to join us.

LESSONS

Partnerships work! ACTAsia have been able to partner in 2020 with Fashion Zoo, this has in part been due to the reputation build up in the previous five years, and also driven by ACTAsia's endeavour to reach a higher number of engagements. The partnership was marked by Stella McCartney giving her blessing in the form of the Opening Show and a quote in support of the work that ACTAsia does. This links back to the credible partners that are essential within the industries that we want to change.

Get data and use the statistics. ACTAsia have been carrying out an annual public survey for both consumers of fur and consumers who do not buy fur, gathering their opinions helps us to shape our education campaign and topics within the forum at the festival. It also serves to update brands and companies, ensuring we are providing accurate and up to date information.

Reputation needs to be built in every decision and strategy the organisation has, not reactionary or radical/extreme, messaging is clear and backed up with up to date evidence which is accurately portrayed. Partnerships are carefully chosen.

Target the millennial and generation Z, middle classes who are the consumer spenders and also the group likely to change the future!

ACT Asia 行动亚洲

Through education, we promote compassion for animals, kindness towards people and respect for the environment in China and throughout Asia.

LEARN MORE

https://www.actasia.org/news/the-future-of-fashion-can-be-beautiful-sustainable-and-fur-free/

https://www.actasia.org/news/fashion-professionals-speak-out-for-fur-free/

https://www.youtube.com/watch?v=1KnzzoT_x7I 2020 recap video

https://www.youtube.com/watch?v=_gSZyEyNRJg&t=138s 2019 recap video

https://www.actasia.org/wp-content/uploads/2019/10/China-Fur-Report-7.5.pdf

https://www.actasia.org/wp-content/uploads/2018/11/Toxic-Fur_6.1.pdf

CONTACT

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WILDSCAN

Location: Southeast Asia, West Africa

Solution Proponent: Freeland

PROBLEM

A majority of officers and the public are unable to identify most wildlife species that are in trade. They do not know which ones are legal or illegal, or which ones are high risk for transmitting viruses.

SOLUTION

WildScan smartphone app enables everyone to identify commonly trafficked wildlife and wildlife parts. Originally designed for frontline law enforcement officers and transport sector workers to correctly identify, report and handle commonly trafficked species, the app also encourages civil society to report wildlife in local markets. WildScan is currently available for free download for Apple and Android devices in multiple languages.

RESULTS

WildScan contains information on 600+ species and contacts from 25+ countries on two continents. It is available in English, French, Portuguese, Thai, Vietnamese and Lao. It can be used by frontline enforcement officers, transportation and shipping officers (aviation, courier, postal), and by members of civil society, including children. Since its relaunch in late 2020, it has been growing a steady user base, and there has been growing interest in expanding it to other parts of the world.

LESSONS

1. You do not just launch an app and then let it go viral. It requires marketing and maintenance.
2. We learned to develop the structure of the app (with help of Vimi, the company that co-designed it with us) so that it can be adapted for any region of the world. So, any time a new country wants it, it's just a matter of adding the library of species that is traded there, applicable laws and translating it.

FREELAND
A world free of wildlife trafficking and human slavery

Protect vulnerable wild animals, communities and ecosystems from trafficking and over-exploitation. Our Vision is a world of pristine ecosystems that is free of wildlife trafficking and human slavery.

LEARN MORE

http://wildlifeprotectiontools.net/
(select tool "Species ID")

https://youtu.be/whpVmVcFdyg

CONTACT

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WILDSCAN
Identify Species
Submit Report
Species Library
Contacts
Species Library
Black Rhinoceros
CITES Appendix I
Black Stork
Black necked swan
CITES Appendix II
Karoli

ENVIRONMENTAL LITIGATION TO STOP NIGHT MONKEY TRAFFICKING FOR BIOMEDICAL RESEARCH

Location: Amazonian triple border region of Peru, Brazil, and Colombia

Solution Proponent: Fundación Entropika

PROBLEM

At the Colombian-Peruvian border of the Amazon, wild night monkeys are harvested for malaria research by a single Colombian biomedical laboratory that illegally sources 70% of their test subjects from Peruvian communities. The continuous extraction of night monkeys decimates local primate populations and contributes to the deforestation of the Amazon since wide expanses of trees are felled during the capture process.

After experimentation, trafficked night monkeys are released back into the wild without screening for diseases or assessment on how resident populations are affected by the influx of released animals.

Night monkeys are susceptible to human pathogens such as TB and herpes simplex virus, and releasing them after prolonged captivity, especially immunocompromised, could introduce harmful diseases into wild populations or establish sylvatic cycles of disease with the potential for spillback from animals to humans.

Entropika takes legal action to stop the trade of night monkeys and the exploitation of indigenous trappers.

SOLUTION

In 2011, Entropika's director filed a "popular benefit" lawsuit, setting off a series of ongoing legal battles to protect night monkey populations from wildlife trafficking for vaccine research.

Entropika uses the court system to hold Colombian national and regional environmental authorities and the biomedical facility accountable for corruption, negligence in issuing permits, unregulated post-experimental releases, and exceeding legal trapping quotas by procuring trafficked monkeys from Peru.

RESULTS

In 2014, Entropika's director won the lawsuit, and trapping permits for night monkeys were revoked until 2016. This ruling stopped the capture of approximately 4,000 monkeys per year and reduced the risk of endemic disease transmission from primates to indigenous trappers.

National and international media coverage of the landmark case exposed corruption, unethical research, and environmental damages costing the laboratory financial backing and prestige.

In 2017, Nancy Ma's night monkey was upgraded from Least Concern to Vulnerable on IUCN's Red List.

In 2019, at Entropika's request, the Comptroller General ordered disciplinary and penal investigations against Corpoamazonia, the regional environmental authority, and the Ministry of Environment, marking the first time that criminal investigations

will be carried out regarding the illegal trade in night monkeys.

Entropika is currently contesting the lab's latest permits to extract 400 monkeys a year from indigenous territories for the period 2020-2022 in court.

LESSONS

Perseverance, adaptability, and continuous follow-up are the key lessons when entering into litigation. Despite several setbacks with the judicial system, public servants will finally be investigated for corruption, making it more difficult for the biomedical facility to obtain trapping permits in the future.

Main obstacles faced are the sluggishness of the court system. Powerful environmental offenders can bribe court officers who will seek any oversight to throw out a case, such as not responding in time to a hearing appointment. Legal teams will utilize obstruction and delay tactics to waste time and resources. In Entropika's case, the defense has repeatedly rescheduled court hearings, causing money to be lost in lawyer fees, flight tickets, and lodging. In addition, Entropika's director became the target of a strategic lawsuit against public participation (SLAPP) by the lab's director to silence claims of wrongdoing by draining financial resources, time, and emotional energy.

In retrospect, paying for representation from a strong law firm from the start would aid in advancing legal processes and save time and energy. However, the resources available only allow for the services of a low-cost lawyer with limited experience, leaving Entropika to shoulder most of the legal work.

Advice to other organizations is to be prepared to face intimidation tactics such as SLAPPs and secure sufficient funds for unexpected expenses and a drawn-out legal process.

Entropika

A grassroots NGO dedicated to conserving biodiversity and improving local livelihoods in the Amazonian border area between Colombia, Brazil, and Peru.

LEARN MORE

News articles

https://e360.yale.edu/features/primate_rights_vs_research__battle_in_colombian_rainforest

https://latinamericanpost.com/34713-angela-maldonado-the-tireless-defender-of-the-amazon

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Videos

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Research and in situ conservation of owl monkeys enhances environmental law enforcement at the Colombian-Peruvian border

Biomedical_Research_vs_Biodiversity_Conservation_in_the_Colombian-Peruvian_Amazon_Searching_for_Law_Enforcement_Where_There_is_Lack_of_Accountability

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CONSERVATION LITIGATION

Location: Mexico, Indonesia, China, DRC, other countries

Solution Proponent: Lancaster University

PROBLEM

Illegal wildlife trade (IWT) is typically enforced through criminal and administrative sanctions that result in limited fines and/or imprisonment. This often limits deterrence effects that allow ongoing illegal trade and associated pandemic risks. Moreover, traditional enforcement strategies do not provide meaningful remedies for the harm caused by IWT. This means that the harms—such as injuries to individual animals, impacts on people's livelihoods, harm to species survival, and even disease—are regularly left unresolved, and responsible parties are not held liable.

Conservation litigation focuses on creating accountability and remedies via liability lawsuits. Such lawsuits can both help remedy the harm caused by specific IWT cases, and help to reduce large-scale, commercial IWT by holding perpetrators responsible for their actions. These lawsuits can help deter future IWT and thus pandemic risks. In the future, similar litigation could potentially also be used to specifically hold responsible parties legally liable for the harms caused by disease risk, although this is not yet tested.

SOLUTION

Conservation-litigation.org has proposed how liability lawsuits can be used to address IWT. This includes development of a framework for how to facilitate these types of lawsuits in countries around the world. This includes development of a guide and training resources for practitioners (e.g., judges, prosecutors, conservation NGOs).

In March 2021, the Indonesian NGO, WALHI North Sumatra, used this framework to develop a civil lawsuit in Indonesia. To our knowledge, this is the first such citizen lawsuit in an illegal wildlife trade case. The case is against a zoo that was illegally keeping protected, endangered species, including Sumatran Orangutan. It seeks to make the zoo responsible for providing remedies that would address the harm the zoo caused to individual animals, species survival and human wellbeing.

These resources and the Indonesian lawsuit present the approach and precedent for future lawsuits, likely undertaken by NGOs and government agencies in a number of high-biodiversity countries. This could be funded by core NGO and government budgets, as well as philanthropic efforts to support strategic litigation.

RESULTS

The key outputs were the development of the framework and guide, as well as its dissemination via engagement with target NGOs.

Proof of intermediate outcomes and changes are the emergency of lawsuits that adopt this approach to addressing IWT. This is indicated by the presence of the 1 lawsuit in Indonesia, and expressions of interest from >4 NGOs in Indonesia and internationally, and of Indonesian government agencies. These suggest that further such lawsuits may be forthcoming.

LESSONS

These lawsuits require a strong understanding of domestic legislation, including a number of procedural requirements, to ensure that any court submissions meet any legal restrictions and are correctly presented. This requires identifying domestic legal counsel that is familiar with and/or will meaningfully analyse domestic legislation and is properly capacitated and supported to undertake new types of litigation that likely differ from what they traditionally practice.

These lawsuits are not everyday interventions, but rather strategic interventions. As such, it is important that groups undertaking these lawsuits consider not only the many details of case development, but also how the case is going to be strategically presented and levered to create broader change.

Lancaster University

Conservation Litigation, a collaborative project hosted by Lancaster University, works to facilitate the use of liability litigation to remedy the harm caused to biodiversity, including by illegal wildlife trade.

LEARN MORE

www.conservation-litigation.org

Guideline

www.conservation-litigation/resources

Details about WALHI's lawsuit

http://walhisumut.org/2021/04/13/walhi-north-sumatra-files-lawsuit-against-pt-nuansa-alam-nusantara-for-illegally-keeping-animals-in-a-zoo-without-permits/; https://twitter.com/walhisumut/status/1382263998905606144

CONTACT

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SABLES RANGER REWARD SCHEME

Location: Chizarira National Park, Zimbabwe

Solution Proponent: National Park Rescue

PROBLEM

The destruction of nature through poaching and habitat degradation is one of the leading causes of biodiversity loss and is a significant driver of zoonotic diseases.

Morale and job satisfaction are important factors in the performance of rangers who defend National Parks and other protected areas.

The Sables Ranger Reward Scheme enables high performing rangers to boost their earnings and provides extra incentives for them to invest in their family's education and healthcare, using a tokenized virtual currency.

By boosting ranger morale and incentivizing high performance, the Sables Ranger Reward Scheme aims to reduce the risk of zoonotic disease by reducing poaching and trafficking of wildlife in and around Zimbabwe's Chizarira National Park.

SOLUTION

National Park Rescue's Sables Ranger Reward Scheme is part of an ongoing 10-year project (from 2018-2028) that aims to improve the motivation and performance of park rangers in Chizarira National Park, Zimbabwe (N -17.6775160, E 27.8782881), by rewarding high performance in their duties.

The total budget for the Sables Ranger Reward scheme is US$130,000 over 10 years and is financed out of National Park Rescue's core operational budget.

Sables are a virtual currency that are earned through high performance, they can be exchanged for goods and services at a set value (e.g., 1 Sable = 1 Dollar), or for education and medical bills at double the value (i.e., 1 Sable = 2 Dollars).

This novel scheme encourages high performing rangers to invest in education and medical care for themselves and their families, increasing workplace motivation, alleviating poverty and reducing the incentive for corruption and negligence.

RESULTS

In three years, this program has benefited over 30 rangers and their families in Chizarira National Park, Zimbabwe, and has paid out over US$30,000 in school fees and medical bills.

Rangers have reported that this scheme is a strong motivating factor in their performance.

Since implementing Sables, we have seen a 98% reduction in indicators of bushmeat poaching, a 90% reduction in elephant poaching, a 550% increase in arrests and a 250% increase in the number of snares removed from the park.

By reducing poaching and wildlife trafficking this project is mitigating the risk of future zoonotic disease outbreaks.

This scheme also provides job security and promotes the welfare, education and capacity building of the rangers and their families.

LESSONS

The job of a frontline park ranger is dangerous, stressful, and often poorly paid. Providing rangers with the opportunity to boost their income through rewarding high performance is an effective way of improving ranger morale and wellbeing, which ultimately improves protected area security.

Rewarding rangers with cash can lead to problematic behaviors such as drunkenness. To address this, NPR created the tokenized virtual currency, whereby we pay for services rather than paying the rangers directly in cash.

It is important to identify what factors are important to rangers. In this instance, rangers reported that education and medical care were particularly important, so we prioritized these using our tokenized reward scheme.

If we were to plan this intervention again, we would focus on educating the rangers about how to use a tokenized reward system to maximize the value of their rewards.

Any organization wishing to replicate this solution should ensure that the value of the rewards is appropriate for the behaviors being rewarded (e.g., arrests, collecting snares, etc.), so as to effectively motivate performance without encouraging/enabling corruption. It is also vital to stipulate the level of reporting/evidence required for rewards to be awarded, e.g., full GPS tracks of patrols, photographs of crime scene, etc., to reduce opportunities for corruption.

National Park Rescue advances environmental protection and animal welfare by preventing poaching and promoting law enforcement in national parks in Africa.

LEARN MORE

http://www.nationalparkrescue.org/docs/YR2_Update_Operation_CK.pdf

https://www.nationalparkrescue.org/

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MITIGATING HUMAN-WILDLIFE CONFLICTS

Location: Sumatra, Indonesia

Solution Proponent: UNDP – Sumatran Tiger Project

PROBLEM

In Sumatra, approximately 650 tigers (Goodrich et al. 2015) are found in highly fragmented and declining rainforest habitat and often disperse into village and farmland areas in search of territory and prey. Annually, on average, 15 people were injured or killed in interactions with tigers and 83 families lost their livestock to tiger predation between the years 2001 to 2016 (UNDP 2020). Such conflicts have historically seen the Balinese and Javan tigers being hunted to extinction. The extirpation of apex predators such as tigers from a wildlife community can lead to population explosions of reservoir species more likely to come in contact with humans and livestock.

Recognising that the safety of communities and their assets is critical for saving the tiger, the Sumatran Tiger Project partners with local communities to prevent and manage Human-Wildlife Conflict (HWC).

Project analyzed spatiotemporal patterns of human- tiger conflict to identify the most conflict prone districts within five tiger landscapes. In this project area, around 80 tiger encounters were documented on an annual basis. To address these conflicts, HWC coordination teams prepared training plans and Standard Operating Procedures to ensure safe human-tiger conflict management for both people and wildlife and created communication networks and tiger proof enclosures to increase responses and effectiveness in HWC handling.

The initiatives will prevent future human and wildlife conflicts that could trigger future zoonotic outbreaks. The transmission of pathogens from animals to humans has brought into sharp focus zoonotic diseases that are spread by animals forced to move out of their natural habitats that are increasingly being destroyed.

SOLUTION

The UNDP Sumatran Tiger Project has introduced five systematic and integrated interventions dealing with human and tiger conflicts working with project partners, national parks and local governments:

1. Forming village, district, and provincial human and wildlife conflict mitigation teams in all landscapes: Gunung Leuser National Park, Kerinci Seblat National Park, Berbak Sembilang National Park and Bukit Barisan Selatan National Park. The initiative has been completed with budgets coming from the project and partners.
2. Conducting advocacy training for relevant stakeholders on increasing communications and reporting skills when responding to human and wildlife conflicts. The initiative has been conducted in all landscapes. Communication networks (in forms of WA Groups) were formed in all landscapes. Members of these networks consist of national parks staff, BKSDA, journalists, and wildlife experts who actively coordinated and discussed solutions to human and wildlife conflicts at fields.
3. Developing curriculum on HWC mitigation and hosting a series of human-tiger conflict mitigation training - using the syllabus - for different targeted groups, e.g., national park/ local government staff, veterinarians, and the local community.
4. Building tiger-proof enclosures in targeted landscapes. The Sumatran Tiger Project built 11 tiger proof enclosures between 2017-2019 - three in Gunung Leuser National Park and eight in Bukit Barisan Selatan National Park. The initiative is ongoing based on the needs at project sites. The initiative was also adopted by members of communities with their own budget or co-funding budget with partners.

5. Strengthening village capacity to handle conflict. From 2016 to June 2019, the project developed two independent village communities (Masyarakat Desa Mandiri) in North Sumatra Province and five independent village communities in Bukit Barisan Selatan Province. The two villages have become part of larger independent village community networks handling human and wildlife conflicts in Sumatra.

RESULTS

1. Teams that are responsible for the monitoring and management of human and tiger conflict, as well as other wildlife conflicts in their respective landscapes, have increased capacity to resolve the problems.
2. The outcome of this training has resulted in positive local media coverage and articles that support tiger conservation and project activities. Project has also successfully formed four communication networks in the project's landscapes (in forms of WA groups) that increase communication and coordination between relevant stakeholders in handling human and wildlife conflicts at fields.
3. The curriculum is used as guidelines to systematically prevent human and wildlife conflicts.
4. A recent analysis showed members of communities are still actively using these tiger proof enclosures to protect their livestock. These enclosures have effectively reduced risks of HWCs and increased people's quality of life in targeted landscapes.
5. These interventions empower communities to independently handle HWCs based on evidence-based mitigation protocols developed by the project.

Specific to livestock predations, the project has managed to reduce livestock predation cases to zero in the villages where tiger proof enclosures have been developed. And based on project partners' reports for PIR (project implementation report) there are no human casualties in the project's landscapes as human and wildlife conflicts in the area have been handled using standardized conflict mitigation protocols.

LESSONS

At the heart of this project's HWC solutions is the development and capacity building of HWC management teams at the village level to empower communities to independently handle tiger encounters. Legal frameworks support the trained teams of volunteers, who are empowered by a governor's decree to monitor and manage encounters with tigers by following an evidence-based protocol. Once the presence of a tiger close to a village is confirmed by the village HWC team, a specialized task force will be called to either install camera traps, closely monitor the tiger's movement or ensure measures to scare tigers away from villages are taken. Close, coordinated communication is critical for ensuring responses are timely and adequate when addressing community concerns.

In addition to these HWC teams, installing tiger proof livestock enclosures have provided increased security for communities and their livestock, as tigers tend not to return if they have not been able to penetrate the enclosures. The integration of community-based prevention and response interventions, informed by research and monitoring and backed by local policies has reduced livestock predation and attacks on people to zero since the start of the programme and provided security for the communities and their livelihoods.

Transforming Effectiveness of Biodiversity Conservation in Priority Sumatran Landscapes

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https://undp-biodiversity.exposure.co/from-conflict-to-co-existence

https://undp-biodiversity.exposure.co/partners-against-crime

https://sumatrantiger.id/en/2021/02/01/terus-bersinergi-tangani-konflik-satwa-liar/

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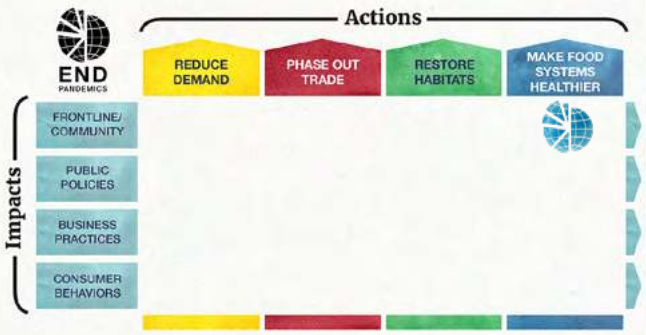
REBOOTING TROPICAL/ SUBTROPICAL AGRICULTURE 1: RESEARCH OUTPUTS AND PILOT PROJECT

Location: Cameroon (replicable across Africa, Southeast Asia, Latin America and Oceania)

Solution Proponent: Prof Roger Leakey, Fellow of World Agroforestry Centre



PROBLEM

1. Many of the problems arising from subsistence agriculture are the consequence of inappropriate international agricultural policies to address hunger and malnutrition in the tropics and sub-tropics. Typically, these policies have promoted land clearance and the intensification of farming systems using monocultures and the application of high inputs of manufactured inorganic fertilizers, pesticides etc. These costly practices are not appropriate for subsistence farmers with only about 2 ha of land and an income of only US$2 per day.
2. Typically, the result of this conventional approach to agriculture is the clearance of new areas of forest or woodland, deforestation and land degradation, characterized by the breakdown of ecological functions and the breakdown of society norms including the trafficking of wildlife, etc.
3. The resulting agroecosystem dysfunction increases the risk of new zoonotic diseases due to the increased interface between people and wildlife.

SOLUTION

An adoptable and successful 3-step approach to reverse the negative impacts of subsistence farming and to meet the needs of the farmers has been developed, tried and tested in Cameroon. It uses:
(i) leguminous shrub species like Sesbania sesban and Calliandra calothyrus at about 20,000 plants per ha. This restores soil nitrogen, organic matter and initiates a functioning and much more productive agroecosystem (e.g., 3-fold higher cereal crop yields); (ii) culturally important, indigenous food and medicinal trees like Dacryodes edulis (Safou), and Irvingia gabonensis (Bush mango) to diversify the farming system. These are selected for their high quality and marketable fruits/nuts and simply propagated by cuttings to create elite cultivars. This diversification of the agroecosystem increases its sustainability; (iii) simple post-harvest processing of the tree products for wider and year-round marketing. The income generated from this can then be used to purchase inputs to further increase food crop yields.

The elements of the solution are to: (a) restore soil fertility and ecological health at virtually zero cost, e.g., without use of inorganic fertilizers and pesticides; (b) generate new sources of income for subsistence households; (c) community-based farmer training and capacity building in agroforestry and simple horticulture techniques.

RESULTS

Typically, 10-30 people are trained per village. Subsequently, the skills are disseminated by word of mouth to neighbouring villages as they set up satellite village nurseries for trees and crops.

Outcomes and impact have been recorded by farmer interviews and surveys. They include: improved soil fertility and health; reduced hunger and malnutrition; increased income and improved livelihoods; and increased biodiversity and carbon sequestration – as published in the science literature. This has transformed the lives of the participating communities, improved agroecosystem functions and restored local level biodiversity in farming systems. In addition, rural communities have developed new local businesses creating employment and improved local infrastructure.

LESSONS

The most important lesson has been the huge importance of a grassroots, participatory process in order to achieve ‘buy-in’ and success. The self-help philosophy is dependent on the farmers having a highly personal incentive to engage with the programme.

Advice is “keep it simple, appropriate to the needs of the community, based on local knowledge – and encourage the villagers to do what is good for their own situation”.

Generating science-based knowledge about the diverse benefits – both direct and indirect – of agroforestry, or trees in farming systems and landscapes, and disseminating this knowledge to develop policy options and promote policies and practices that improve livelihoods and benefit the environment.

LEARN MORE

Books

Leakey R.R.B. 2012. Living with the Trees of Life – Towards the Transformation of Tropical Agriculture, CABI, Wallingford, UK. 200pp.

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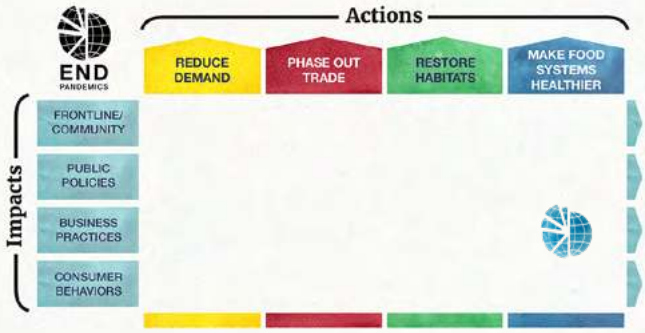
REBOOTING TROPICAL/ SUBTROPICAL AGRICULTURE 2: IMPLEMENTATION AND SCALING OF COMMUNITY RESTORATION OF DEGRADED LANDS

Location: 35 projects in 9 African countries (replicable across tropics and subtropics)

Solution Proponent: International Tree Foundation



PROBLEM

1. Tropical deforestation, desertification and land degradation due to inappropriate agricultural policies and technologies, especially in subsistence households in tropical and subtropical areas.
2. These problems result in hunger, malnutrition, poverty and social injustice, as well as loss of wildlife habitat and climate change. These are intertwined with the breakdown of ecological functions at the plot and landscape level, urban/ illegal migration, social injustice and conflict.
3. Social, economic and ecosystem dysfunction, loss of wildlife habitat and their associated social problems alter predator-prey dynamics and hinder the ability of ecosystems to self-regulate, promoting zoonotic spillover.

SOLUTION

ITF's Centenary Programme in the Kenyan Highlands celebrates its foundation in 1922 by promoting community-led action to protect, restore and care for the environment and sustain livelihoods, to reverse deforestation, land degradation and build resilience to climate shocks. It aims to plant 20 million trees by 2024 and improve the livelihoods of 50,000 people. It engages with local communities in the Five Water Towers of Kenya and helps them to plant trees in degraded forest areas and in farmland. Projects involve community training in practical skills and technologies through the establishment of tree nurseries and small-scale agroforestry. Farmer training and capacity building in agroforestry and simple horticulture are the key elements of the solution. Through its schools programme it inspires children, their teachers and parents to understand and protect the natural world, and to learn about how natural resources support life.

To date this programme has planted 1.27 million trees, restored 9000 ha of degraded forest and farmland; involving 17000 people in local communities. The focus is on environmental and social rehabilitation, including the promotion of biodiversity and soil/water management; as well as poverty alleviation and the mitigation of climate change.

RESULTS

Outcomes and impact are recorded by farmer interviews and surveys. These are summarized annually in Annual Report and ITF Impact Statements, as well as on ITF website (www.internationaltreefoundation.org).

LESSONS

The most important lesson has been the huge importance of a grassroots, participatory process in order to achieve 'buy-in' and success. The self-help philosophy is dependent on the farmers having a highly personal incentive to engage with the programme. ITF has been implementing similar programmes for 99 years and aims to continue into the foreseeable future by funding new projects annually. Advice is "keep it simple, appropriate to the needs of the community, based on local knowledge – and encourage the villagers to do what is good for their own situation".

Working with communities in Africa and the UK to carry out sustainable community forestry projects which protect, regenerate and cultivate trees and forests to conserve habitats rich in biodiversity and to enhance human and environmental well-being.

LEARN MORE

Impact Reports (2012-2020), 'Trees' Journal (2010-2020), at: Trees Journal and Impact Report - International Tree Foundation.

Blogs archives at Blog Archives - International Tree Foundation.

The Great Reset Project - International Tree Foundation

Website: www.internationaltree-foundation.org

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EndPandemics
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https://endpandemics.earth/join.html