

## CLIMATE CHANGE AND RISING DISEASES: COPING WITH NEW AND FUTURE HEALTH CHALLENGES

As a long-standing actor in the fight against infectious diseases, Global Health Advocates is particularly concerned about the health consequences of climate and environmental crises. Climate change and its consequences (floods, droughts, heatwaves, storms, etc.) directly and indirectly impact health by increasing the number of deaths, multiplying risks of infectious diseases' propagation and deteriorating the determinants of health. According to the World Health Organization, climate change is the greatest threat to humanity and has a multiplier effect on inequalities, threatening to scale back global health progress made in recent decades.

Global Health Advocates aims to create stronger political commitment from the European Union on climate-sensitive diseases. This first paper intends to suggest policy proposals to be explored jointly with decision makers, academics and civil society actors.

### Key figures:

- 60% of known infectious diseases and up to 75% of new or emerging infectious diseases are zoonotic in origin (i.e. caused by animal-to-human transmission of pathogens)<sup>1</sup>.
- According to projections, the seasonality of malaria in Europe could be extended to 6 months by 2050<sup>2</sup>.
- From 2009-2019, only 0.2% of total bilateral and multilateral funding for climate change adaptation supported projects with a specific health objective<sup>3</sup>.

### How to cope with the health and environmental crisis simultaneously:

- Tackle biodiversity loss and promote a "One Health" approach.
- Invest in research and development (R&D) to address the health consequences of climate change.
- Strengthen surveillance and prevention.
- Increase funding dedicated to health and climate.
- Strengthen healthcare systems worldwide.
- Integrate health as a core topic of all international climate discussions.

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<sup>1</sup> UN Environment Programme, rapport Preventing the next pandemic - Zoonotic diseases and how to break the chain of transmission, 2020 ([preventing-future-zoonotic-disease-outbreaks-protecting-environment-animals-and](#))

<sup>2</sup> European Environment Agency, "Climate change as a threat to health and well-being in Europe: focus on heat and infectious diseases", 2022, pp. 44-46 ([climate-change-impacts-on-health](#))

<sup>3</sup> Organisation météorologique mondiale, "2023 state of climate services - health" ([https://www.politico.eu/wp-content/uploads/2023/11/02/1335\\_WMO-Climate-services-Health\\_web\\_en.pdf](https://www.politico.eu/wp-content/uploads/2023/11/02/1335_WMO-Climate-services-Health_web_en.pdf))

## 1. No country is immune from climate-change health impacts

**The prevalence of infectious diseases of zoonotic origin increased significantly in recent years: Covid-19, SARS, AIDS, Ebola, Dengue fever, malaria...** Today, around 60% of known infectious diseases affecting humans and up to 75% of new or emerging infectious diseases are of zoonotic origin<sup>4</sup>, meaning they are caused by human-to animal transmission of pathogens. The destruction of biodiversity - deforestation, intensive farming and livestock breeding, monoculture, transport, urbanisation, globalisation and increased exploitation of resources - is bringing people into closer contact with animals they may never have been near before, accelerating the transmission of pathogens at the origin of new pandemics<sup>5</sup>.

**Biodiversity regulates the risk of infection.** Studies show that in primary forests, untouched by humans, pathogens operate at very low levels. On the contrary, biodiversity loss creates the right conditions for human-to-animal transmission of pathogens and ultimately leads to the emergence and spread of infectious diseases<sup>6</sup>. This was the case for HIV/AIDS, transmitted to humans by monkeys, and for Ebola, transmitted to humans by bats, themselves contaminated by monkeys. The genetic proximity between humans and primates facilitates the transmission of pathogens between the two species. However, zoonoses can also emerge from transmission by other animals, as is the case with mosquito-borne diseases (dengue fever, chikungunya, malaria and zika) and Lyme disease. Studies have shown that the fragmentation of New York State's forests has led to the proliferation of rodents capable of adapting to disturbed ecosystems. This in turn increases the risk of Lyme disease infection transmitted by ticks, themselves infected with a bacteria whose reservoir is the white-footed mouse<sup>7</sup>.

**With rising temperatures and increasing rainfall, pathogen vectors such as ticks or mosquitoes (especially the tiger mosquito) and animal reservoirs (bats or birds) will increase their geographical range and seasonality, contaminating longer and farther, especially in areas that were previously spared.** Throughout Europe, projections show that climate is increasingly becoming favourable to the proliferation of the tiger mosquito (the vector of dengue fever, chikungunya and zika), thereby greatly increasing the risk of contamination in Europe<sup>8</sup>. This summer, 36 "local" cases of dengue fever (i.e. contracted directly in mainland France) were recorded in France. **Increased rainfall in Europe creates more habitats for mosquitoes, while rising temperatures increase chances of transmission.** This also explains the spread of malaria to northern countries. Since 1950, malaria seasonality has considerably increased in Europe, rising from 0.4 months for the period 1951 - 1960 to 0.51

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<sup>4</sup> UN Environment Programme, rapport Preventing the next pandemic - Zoonotic diseases and how to break the chain of transmission, 2020 ([preventing-future-zoonotic-disease-outbreaks-protecting-environment-animals-and](#))

<sup>5</sup> La Fabrique des pandémies (<https://lafabriquedespandemies.com>)

<sup>6</sup> <https://lafabriquedespandemies.com>

<sup>7</sup> La Fabrique des pandémies, La maladies de Lyme (<https://lafabriquedespandemies.com/video/la-maladie-de-lyme>)

<sup>8</sup> European Environment Agency, "Climate change as a threat to health and well-being in Europe: focus on heat and infectious diseases", 2022, p. 36 ([climate-change-impacts-on-health](#))

months from 2011 to 2020<sup>9</sup>. By 2050, malaria seasonality is projected to extend to 6 months in Europe<sup>10</sup>. The United States is also affected: during the summer of 2023 and for the first time in over 20 years, [several cases of local malaria were detected](#). Extreme climate shocks such as cyclones, storms or floods enable infectious diseases to thrive. For example in 2022, devastating floods in Pakistan [led to significant malaria outbreaks](#).

**Faced with these threats, we urgently need to better prepare our health systems**, as lack of investments could have devastating consequences. According to experts, global warming must be limited to 1.5°C if we are to prevent the catastrophic effects of climate change on health and save our ecosystems. Beyond, permafrost meltdown is yet another major risk that comes with rising temperatures. Infectious agents buried beneath the ice and against which humans have no immune defence or treatment could emerge. However, past carbon emissions have already made some of the health consequences of climate change inevitable, particularly in low-income countries.

## 2. France and the EU's responsibility in biodiversity loss and rise in greenhouse gas emissions

The burden of climate change is highly uneven: **the richest countries, with their lifestyles and historical emissions, are largely responsible for the deterioration of the world's ecosystems, while the poorest countries are the first ones facing its consequences**. One of the best examples being the devastating effects of intensive palm oil production on ecosystems. [A palm plantation reduces biodiversity by at least 90% compared to a primary tropical forest](#). These plantations require tropical forests' deforestation and the destruction of wildlife's habitat, leading to an increase in interactions with humans, in turn facilitating pathogens' transmission. Palm oil is intensively produced in low-income countries and imported en masse to high-income countries, where it is used to produce biofuels, food products and cosmetics. [Between 1990 and 2020, palm oil production increased sixfold, mainly in Asia \(85% of global production comes from Indonesia and Malaysia\), Africa and Latin America](#). Richest countries exploit agricultural and forestry land outside their borders to meet their own consumption needs, thereby contributing to the destruction of ecosystems in the poorest countries<sup>11</sup>.

Biggest carbon emitters, responsible for the destruction of ecosystems, owe a debt to the least polluting countries, often the poorest, which are already particularly affected by epidemics and

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<sup>9</sup> Ibid, pp. 44-46.

<sup>10</sup> Ibid, pp. 44-46.

<sup>11</sup> WWF, "Déforestation importée : arrêtons de scier la branche", 2018 ([deforestation-importee](#)). The surface area required to satisfy French imports of the main agricultural and forestry products (soy, cocoa, palm oil, rubber, wood, paper pulp...) is 14.8 million hectares, or more than a quarter of the surface area of mainland France, mainly located in southern countries.

health emergencies (for example, Africa registers an average of 100 health emergencies per year - more than any other region in the world<sup>12</sup>).

**The commitment of high-income countries is not commensurate with their responsibilities:** financing for adaptation in developing countries are 5 to 10 times lower than estimated needs, and the gap keeps widening<sup>13</sup>. Countries responsible for historical emissions, including France and other members of the European Union, have a duty to repay their ecological debts to those most vulnerable to climate change and take action to contain the global pandemic risk - the Covid-19 crisis has shown just how easily viruses cross borders. The lack of investment in health issues related to climate change is particularly worrying given the deteriorating global context. With events such as the war in Ukraine and the Middle East, the energy crisis and the food crisis, international funding for health is in decline<sup>14</sup>. It is currently projected that many countries could spend less on healthcare than they did before the Covid-19 pandemic<sup>15</sup>.

While many countries wish to make health a priority in their efforts to protect populations from the effects of climate change, only a quarter are actually in a position to implement national health and climate strategies<sup>16</sup>. This lack of resources particularly affects low- and middle-income countries: almost 30% of LMICs have no funding at their disposal to implement these strategies, even though their populations are already severely affected by the health consequences of climate change<sup>17</sup>. In this context, international support is essential: 62% of LMICs depend on some level of external financing for their health and climate change strategy<sup>18</sup>. However, between 2009-2019 only 0.2% of total bilateral and multilateral funding for climate change adaptation supported projects with a specific health objective<sup>19</sup>. Climate funds, such as the Green Climate Fund and the Climate Change Adaptation Fund, have no clear strategic intent to invest directly in the health sector or in activities that would have co-benefits for health, even though their highly flexible mandate gives them ample room to do so<sup>20</sup>.

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<sup>12</sup> Jeune Afrique, "L'Afrique, première concernée du futur traité sur les pandémies" ([lafrique-premiere-concernee-du-futur-traite-sur-les-pandemies](#))

<sup>13</sup> UN Environment Programme, Rapport 2022 sur l'écart entre les besoins et les perspectives en matière d'adaptation aux changements climatiques (<https://www.unep.org/fr/resources/rapport-2022-sur-lecart-entre-les-besoins-et-les-perspectives-en-matiere-dadaptation-aux>)

<sup>14</sup> <https://www.cgdev.org/publication/future-global-health-spending-amidst-multiple-crises>

<sup>15</sup> Action Santé Mondiale, Making it work : What role for MDBs in financing health for all ?, 2023 ([What-role-for-MDBs-in-financing-health-for-all-Our-recommendations.pdf](#))

<sup>16</sup> OMS, "2021 WHO health and climate change global survey report" (<https://iris.who.int/bitstream/handle/10665/348068/9789240038509-eng.pdf?sequence=1>)

<sup>17</sup> <https://iris.who.int/bitstream/handle/10665/348068/9789240038509-eng.pdf?sequence=1>

<sup>18</sup> <https://iris.who.int/bitstream/handle/10665/348068/9789240038509-eng.pdf?sequence=1>

<sup>19</sup> Organisation météorologique mondiale, "2023 state of climate services - health" ([https://www.politico.eu/wp-content/uploads/2023/11/02/1335\\_WMO-Climate-services-Health\\_web\\_en.pdf](https://www.politico.eu/wp-content/uploads/2023/11/02/1335_WMO-Climate-services-Health_web_en.pdf))

<sup>20</sup> Institute for Global Health and Open Consultant, "Improving investments in climate change and global health : Barriers to and opportunities for synergetic funding", 2023 ([https://globalhealthsciences.ucsf.edu/sites/globalhealthsciences.ucsf.edu/files/climate\\_and\\_health\\_finance\\_fi\\_nal.pdf](https://globalhealthsciences.ucsf.edu/sites/globalhealthsciences.ucsf.edu/files/climate_and_health_finance_fi_nal.pdf))

Health risks linked to climate change have not been featured as a priority in international climate discussions, and climate-sensitive diseases have not been a central topic of the Pandemic Treaty negotiations nor of the Paris Agreement. In this context, the adoption of a [declaration on climate and health](#) during the first official Health Day at COP 28 is particularly timely. This initiative aims to refocus international discussions on the threat posed by climate-sensitive diseases, highlighting the considerable co-benefits of implementing climate change mitigation and adaptation policies beneficial to health. In addition to their positive impact on the environment, these measures are also conducive to promoting global health. The international community must understand the urgency of investing in adapting health systems to climate change: "if we don't act, climate change will soon lead to the collapse of healthcare systems worldwide"<sup>21</sup>.

### 3. A fragile world faced with pandemic risks

Over the past two years, the response to the Covid-19 pandemic, global health and pandemic preparedness have been at the heart of all international discussions - G7, G20, European Council, UN General Assembly. However, the focus on health topics has lost momentum, just a few months after the WHO announced Covid-19 was no longer a public health emergency<sup>22</sup>. Generalised fatigue from the main Global North countries to continue these discussions, a succession of crises competing for international attention, and a wait-and-see attitude to pandemic preparedness are to blame. A report by the Independent Panel on Pandemic Preparedness and Response reveals that recommendations made by bodies tasked with drawing lessons from previous health crises (Ebola, SARS, H1N1, etc.) have only been implemented to a very limited extent, which explains the lack of preparedness when the Covid-19 crisis started<sup>23</sup>. These cycles of "panic and neglect" mean that pandemic preparedness takes a back seat as soon as the last health threat fades from memory<sup>24</sup>.

**The Covid-19 pandemic deepened inequalities between high and low-income countries,** further undermining trust in international cooperation bodies, particularly from our main partners in Africa. [During the first year of Covid-19 vaccine distribution, only 3% of people in](#)

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<sup>21</sup> Le Monde, "Si nous n'agissons pas, les changements climatiques conduiront bientôt à la submersion des systèmes de santé du monde entier", Tedros Adhanom Ghebreyesus, directeur général de l'OMS ; D<sup>r</sup> Sultan Ahmed Al-Jaber, président désigné de la 28<sup>e</sup> conférence des Nations unies sur les changements climatiques (COP28) ; D<sup>re</sup> Vanessa Kerry, envoyée spéciale de l'OMS pour les changements climatiques et la santé, directrice générale de Seed Global Health, 12 novembre 2023 ([https://www.lemonde.fr/idees/article/2023/11/12/si-nous-n-agissons-pas-les-changements-climatiques-conduiront-bientot-a-la-submersion-des-systemes-de-sante-du-monde-entier\\_6199673\\_3232.html](https://www.lemonde.fr/idees/article/2023/11/12/si-nous-n-agissons-pas-les-changements-climatiques-conduiront-bientot-a-la-submersion-des-systemes-de-sante-du-monde-entier_6199673_3232.html))

<sup>22</sup> Le Monde, Tribune de Antoine Flahault et Michel Kazatchkine, Covid-19 : "Le désarroi devant l'urgence sanitaire a laissé la place à l'omission, voire à la négligence", 15 septembre 2023 ([covid-19-le-deni-est-un-pari-politique-risque\\_6189480\\_3232.html](https://www.lemonde.fr/idees/article/2023/09/15/covid-19-le-deni-est-un-pari-politique-risque_6189480_3232.html))

<sup>23</sup> Panel indépendant pour la préparation et la réponse aux pandémies, "A road map for a world protected from pandemic threats", 2023 ([https://live-the-independent-panel.pantheon.io/wp-content/uploads/2023/05/Final-Road-Map-Report\\_May-2023\\_Interactive.pdf](https://live-the-independent-panel.pantheon.io/wp-content/uploads/2023/05/Final-Road-Map-Report_May-2023_Interactive.pdf))

<sup>24</sup> Panel indépendant pour la préparation et la réponse aux pandémies, "Covid-19 : Agissons pour que cette pandémie soit la dernière", 2021 (<https://theindependentpanel.org/wp-content/uploads/2021/05/COVID-19-FrenchFinal.pdf>)

[low-income countries received at least one dose of vaccination, compared with over 60% of people in high-income countries.](#)

**The consequences of these inequalities are currently hampering negotiations on a new global pandemic accord.** Equity, access to countermeasures in times of crisis and technology transfer are the main sticking points. Low-income countries consider that the current version of the text will not prevent inequalities seen during the last pandemic from reoccurring. Currently unable to produce vaccines and treatments needed to face a pandemic, they still worry being left on the side-line of pandemic response<sup>25</sup>.

Faced with climate change, the lack of political interest in pandemic preparedness and health system strengthening is alarming. If no action is taken, future pandemics, most likely of zoonotic origin, are likely to be even more devastating than the Covid-19 crisis.

## Recommendations

- 1. [Tackling biodiversity loss and promoting a "One Health" approach.](#)** Preserving biodiversity is essential to guaranteeing the stability of ecosystems and human health. Bolstering efforts to protect biological diversity and preventing the destruction of natural habitats both contribute to reducing the spread of zoonotic diseases and maintaining an ecological balance. To achieve this, **measures prohibiting or limiting the most harmful human activities to our ecosystems, such as palm and soybean plantation, deforestation and intensive livestock farming, must be implemented worldwide.** The development of a "One Health" approach would help shift away from a "siloe" logic that segments issues, promoting instead an interdisciplinary vision that links human, animal and environmental health.
- 2. [Investing in research and development to tackle the health consequences of climate change.](#)** We urgently need to deploy treatments and vaccines to tackle climate-sensitive diseases such as malaria, tuberculosis, dengue fever and chikungunya. We need to increase investments in R&D to enable the development of healthcare products that meet the new challenges posed by climate change. In this regard, [WHO's approval in early October of a second malaria vaccine for children](#) is a major step forward. [A first vaccine against chikungunya should also be put on the market very soon.](#)

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<sup>25</sup> GAVI, "With the publication of a new action plan, Gavi is committed to supporting the establishment and sustainability of vaccine production capacities in Africa, in line with the African Union's vision for 2040." (<https://www.gavi.org/fr/actualites/media-room/publication-nouveau-plan-action-gavi-soutenir-mise-place-production-vaccins-vision-ua-horizon-2040>). Despite strong demand on the continent, the African industry currently produces just 0.1% of the world's vaccine supply.

- 3. [Strengthening surveillance and prevention.](#)** Zoonoses pose a serious public health problem, accounting for the majority of existing and emerging infectious diseases. **To address this threat, prevention and monitoring methods need to be put in place worldwide, particularly in countries heavily impacted by deforestation.** This involves developing surveillance systems to detect the risk of human-to-animal pathogens transmission, raising awareness among vulnerable populations of best practices to reduce risks (regulation on animal feeding and care, drinking water, waste treatment, etc.). This can only be successful if we are serious about funding the reinforcement of surveillance and warning systems, quality infrastructures and the training of health workers to deal with these new threats.
- 4. [Increasing funding for health and climate.](#)** The Covid-19 pandemic has highlighted the need to significantly increase investment in healthcare. With climate change and its associated health risks, these investments are all the more essential to prevent, prepare and respond to future pandemics. To address this urgent need, funding needs to be made available at the international level: **Multilateral Development Banks and climate funds need to adjust their scope of work to better meet the health needs associated with climate change. They must commit to increasing funding for adapting healthcare systems to climate change.**
- 5. [Strengthening healthcare systems worldwide.](#)** Climate change directly impacts health systems, health infrastructures and healthcare workers, all the more in low-income countries. **Healthcare systems need to be strengthened, particularly through official development assistance, in order to cope with the new threats posed by climate change.** Health systems must be able to anticipate and implement adaptive interventions against climate-sensitive diseases.
- 6. [Integrate health as a core topic of all international climate discussions.](#)** The latest [Lancet Countdown report](#) reminded us that climate shocks such as rising temperatures, precipitation, droughts and floods impact health directly and indirectly, by increasing the number of deaths, accelerating the spread of infectious diseases and deteriorating the determinants of good health. **The impact of climate change on health must be reflected in international discussions on climate.** The organisation of a day dedicated to health at COP 28 marks a crucial step in this regard. The declaration must be ambitious and innovative. We urge all States Parties to sign the declaration, include an ambitious roadmap with precise implementation targets and demand that future climate talks all include solutions to health issues.