sanofi

Health Resilience to Environmental Change

June 2024

1. Context

The challenges facing society and the planet are becoming increasingly complex. According to the World Health Organization, the impacts of climate change have the potential to undo over 50 years of progress in areas such as global health, poverty reduction and development while widening the health equity gap. Climate risks to health are appearing faster with greater severity than previously expected. These shifts are making it more challenging to adapt initiatives and are straining health care and societal infrastructures worldwide.

2. The greatest Threat to Public Health this Century: The Climate Crisis

Climate change is widely recognized as the greatest threat to human health and poses one of the biggest challenges to the resilience of our health system. The health of the people and the planet are intrinsically linked and have direct and indirect impacts on one another. Environmental factors that are directly impacting our health include extreme weather events, floods, wildfires, and droughts. Indirect impacts of climate change include air pollution, biodiversity loss, infectious vector propagation. Vulnerable communities in low- and middle-income countries are most severely impacted.

As the environment continues to degrade, we are seeing an increased prevalence and severity of existing or emerging diseases on a global scale. According to the World Health Organization, climate change is expected to directly cause approximately 250,000 additional deaths per year. Indirectly, the impact is widespread. Research collected in the Lancet Countdown, led by scientific experts, academic centers and UN agencies, shows 3.3 million annual deaths resulting from exposure to air pollution, could be avoided through ambitious mitigation. These health trends are further stressing resources in overburdened healthcare systems.

As awareness of this global health challenge continues to grow, the bilateral relationship between climate and health underscores the urgency of addressing climate change for the well-being of both our planet and its inhabitants. It is not a problem that can solved by a singular organization or with a singular strategy. To overcome the climate / health crisis, collaborative, multisectoral partnerships are needed to develop innovative and sustainable solutions.

3. Tackling Diseases Exacerbated by Climate Change

There is a growing body of evidence supporting the critical impact climate change is having on the health of humanity. There are three environmental issues that manifest in multiple ways having direct and indirect impacts:

Pollution:	***Climate Change:***	***Biodiversity Loss:***
Manifested in air pollution, chemical pollution, and water contamination.	Presenting itself in rising temperatures, extreme heat, and shift in seasonal patterns.	Causing the spread of pathogens and allergens and changes in vector ecology and parasitic activity.

While awareness continues to grow, there remains gaps research and data that can better inform policies and initiatives. The generation, collection and sharing data on the linked topics of

environmental and human health are vital to address this crisis. Sanofi has undertaken an end-to-end study to identify the associations between environmental change impacts and our portfolio and pipeline of products, and to inform future strategies. The impacts of this study focus on the treatment and prevention of five heavily impacted therapeutic areas where Sanofi has the potential to have a significant impact: immunology; vector-borne and infectious diseases; pandemic pathogens; non-communicable chronic conditions (like cardiovascular diseases and cancer); and allergies.

The study evaluated 6 843 published reports and finally focused on 200 robust studies. The study showed that 70% of Sanofi's portfolio indications and 78% of our R&D pipeline indications are targeted at diseases impacted by at least one environmental hazard (air pollution, shift in seasonal patterns, chemical pollution, extreme temperatures, water pollution). The analysis also found that of the five environmental hazards identified, air pollution has the greatest adverse impact on the disease areas of interest accounting for 62% of the impact on our indications. Other key findings showed that cardio-vascular disease (CVD) and diabetes are the top two therapeutic areas that will be impacted by the environmental hazards, with two major indications being impacted: ischemic stroke and T1 diabetes. Respiratory indications such as Chronic Obstructive Pulmonary Disease (COPD) and asthma are also strongly impacted by environmental hazards.

4. A Holistic Approach to Mitigate Environmental Impacts

The resilience of healthcare systems worldwide requires a dual strategy of mitigating and adapting to climate change. Sanofi is committed to do its part with a holistic strategy that mitigates the impacts today while safeguarding our futures. We have undertaken a holistic approach that not only addresses the complex health challenges created by climate change while building stronger healthcare ecosystems.

We are helping to adapt and build resilience to the new health challenges that a changing environment will bring. We are achieving this utilizing a four-pronged approach :

1. Mitigating the impact our operations and people have on the environment through our Planet Care program
2. Developing innovative medicines & vaccines to protect patients with diseases exacerbated by climate change
3. Driving coordinated action to reduce health system carbon footprint
4. Strengthening healthcare ecosystems for the most vulnerable communities with our not-for-profit Global Health Unit and Sanofi's philanthropic organizations, Foundation S.

1. Reduce the impact of our activities and products on the environment

- We have a positive track record in reducing greenhouse gas emissions related to our activities [29% of reduction compared to 2019(2)], a reduction target of 55% by 2030, and net zero by 2045, in line with our commitment to the Paris Agreements (3).

- Our commitment together with the world's most influential companies [RE100(4)] is to use 100% renewable across all our global operations by 2030 building the path to carbon neutrality by 2030.

- Top tier internationally recognized scores in water stewardship and in the mitigation of climate change (5), make Sanofi a leader among the companies that are effectively leading the way to a more sustainable future.

- Our commitment is to eco-design all our new products placed on the market by 2025 and have our vaccines packaging blister-free by 2027.

2. Developing innovative medicines

Sanofi continues to utilize data to better inform its strategy to develop therapies that address the challenges caused by environmental hazards. A better understanding of the implications of a changing environment on human health will allow Sanofi to embed environmental factors at every point of its strategic decision-making journey, from R&D to patient disease management. With Sanofi's portfolio, as well as its people and partners, we are uniquely positioned to prevent, treat, and cure disease in these therapeutic areas.

Sanofi has effective immunology therapies, such as dupilumab (Dupixent®), to treat patients suffering from asthma and has more recently to treat chronic obstructive pulmonary disease (COPD), both which are heavily exacerbated by air pollution. Its portfolio and pipeline of vaccines is equipped to prevent growing threats like yellow fever and meningitis, complemented by a ramp up in pandemic preparedness capabilities with investments in mRNA (messenger ribonucleic acid) technology and agile leading-edge Evolutive Vaccine Facilities.

3. Drive coordinated action to reduce health system carbon footprint

In 2021, at the COP26, Sanofi joined the Sustainable Markets Initiative (SMI) Health Systems Task Force working with other companies as well as global and public institutions such as UNICEF or WHO. Its work is driven by the conviction that a whole system approach is needed to decarbonize healthcare. Within this initiative, Sanofi is leading the working group on "patient care pathway decarbonization". Task Force members have launched sector-first commitments, actions and recommendations to deliver near-term targets and support the transition to net zero, sustainable healthcare. These actions focus on three priority areas: supply chain and patient care pathways decarbonization and the use of digital innovation in clinical research[i].

Beyond the SMI collaboration at global level, Sanofi is working locally to accelerate the reduction of environmental impact of the entire health ecosystem by:

- Encouraging the priotization of health care policies and actions to achieve the WHO ambition of sustainable "low carbon" health systems by 2030 and "net zero" emissions by 2045 in countries committed to the Alliance for Transformative Action on Climate and Health (ATACH);
- Measuring the reduction of carbon emissions along the patient journey by building a common framework, generating data on its innovative products and programs allowing to identify hotspots of carbon emissions within healthcare systems and adopting the necessary interventions to reduce the carbon footprint.
- Contributing to the recognition of the value of Sanofi medicines, vaccines and programs supporting the reduction of carbon emissions in Health Systems.

4. Support Climate Adaptation for Vulnerable Communities

Sanofi's Foundation S is dedicated to helping vulnerable communities adapt to the health impacts of climate change. The foundation partners with NGOs to implement programs in regions like Bangladesh and Kenya, focusing on healthcare access, sanitation, and community-based development to build resilience in areas heavily affected by climate-related events

We are supporting climate adaptation measures for communities most vulnerable to climate change impacts by:

- promoting affordable treatment and prevention programs such as malaria through Sanofi Global Health, a unique non-profit model aiming to improve access to care in 40 low-income countries by distributing 30 drugs covering therapeutic areas exacerbated by environmental degradation;
- bringing humanitarian aid and supporting local initiatives through Foundation S, our philanthropic organization. In Bangladesh, the sixth most impacted country by climate change, Foundation S is working in partnership with the Friendship NGO, supporting projects to restore access to healthcare systems for communities deeply impacted by floods and extreme weather events;
- Leveraging the Foundation S Climate Action & Health Resilience Grants Program, which aims to support adaption solutions that are informed and implemented by communities themselves and that seek to address current and future impacts of the climate crisis on community health.

[i] Seven Pharma CEOs Announce New Joint Action to Accelerate Net Zero Healthcare | Sustainable Markets Initiative (sustainable-markets.org)