

INTRODUCTION

Nicolas Renard - Executive Director, Veolia Institute



The environment and health, health and the environment. The two are inextricably linked, each depending on the other: environmental deterioration harms human health, and when we protect the environment, the environment protects human health. The relationship between the two has long been recognized, as illustrated by the advice from Hippocrates many years ago to avoid building towns in unhealthy locations. The word malaria, meaning bad air in Italian, expresses

this causal link between disease and the state of the environment, although it is misleading since malaria does not result from bad air but is caused by a parasite, *Plasmodium falciparum*, transmitted by *Anopheles*, a genus of mosquito.

Air, water, soil and climate all affect our organisms and our lives, from birth to death. As humans, our environment, be it natural, urban or domestic, puts us in contact with innumerable biological, chemical, and physical agents liable to impact our health. The current health crisis could well be interpreted as one of the major ecological crises facing humanity, on a par with pollution, climate change, the depletion of natural resources, and the erosion of biodiversity. Phenomena that all result from human activity, and that all pose a threat to the environment or human health.

Rising death rates caused by heatwaves, more frequent epidemics, declining mental health, poorer air quality, compromised access to water, food insecurity, and so on: in one way or another, every country in the world is feeling the impacts of the climate crisis. To the extent that some are dubbing it “the number-one public health crisis.”¹

Heat kills half a million people every year. And heatwaves, these silent killers, are becoming more numerous and more intense. Europe is the continent that is heating up fastest. A two-degree rise in global temperatures will lead to European cities seeing temperatures as high as 50°C. And who among us knows what life will be like at 50°C?

The effects of climate change on health are evident in many countries, with surges of dengue fever in Brazil, malaria in Chad, and cholera in Zambia and Malawi. In the future, rising temperatures will facilitate the spread of mosquito-borne arboviruses such as dengue, chikungunya and zika, as well as extending their periods of peak activity. This will also help spread other viruses, such as the Powassan virus currently found in North America that can cause severe encephalitis.

“Human health is a direct expression of the quality of the relationship between people and ecosystems. It will also be the final arbiter of the success or failure of our policies for adapting to climate change.”

In our oceans, rivers and lakes, rising temperatures will encourage the reproduction of protozoans and pathogenic bacteria, leading to new outbreaks of water-borne diseases. Melting permafrost is another factor and a possible health timebomb, releasing viruses and bacteria trapped for tens of thousands of years that, in all likelihood, humans will have no immunity against and antibiotics will be powerless to treat.

Low-income countries will be hit harder by the consequences of climate warming. If we compare cities in Pakistan to Riyadh in Saudi Arabia, all of them will experience equivalent temperature rises by 2050. But the numbers of heat-related deaths will be very different. More people will die in Pakistan because the country has fewer financial resources to allow it to adapt to a hotter planet.

The ability to adapt is critical to both the survival of humans and ecosystems. Changes in the climate are dramatically altering the distribution of rainfall and plant cover. They are also altering the behavior, range and distribution of animals and insects, including pollinators. They threaten ecosystems that have not had enough time to adapt, with direct repercussions on human health. The One Health approach is one solution to these problems. It stresses the interconnected relationships between ecosystem health, animal health, and human health. Healthy ecosystems have beneficial effects on

human health. “We knew already that we live on one planet. We then discovered that there is only one health.”²

In truth, a broad panoply of solutions needs to be tirelessly implemented all over the world if we are to protect human health in the face of climate change. For example, including planted and shaded areas in urban patterns, designing buildings with sufficient thermal mass to provide heat in winter and cooling in summer, using wastewater recycling systems, and, of course, changing our lifestyles.

Particular attention must be paid to medical infrastructure. Unless changes are made, facilities in many countries will be overwhelmed by the impact of climate change on local people. Hospitals have to prepare to receive greater numbers of patients. They need to plan for the increasing scarcity of water, which they use in large amounts. They need to rethink their air conditioning and insulation systems, which are hardly ever designed to deal with extreme heat. And facilities located in coastal areas need to reinforce their protection against cyclones, which will grow in intensity.

Human health is a direct expression of the quality of the relationship between people and ecosystems. It will also be the final arbiter of the success or failure of our policies for adapting to climate change.

¹ Vanina Laurent-Ledru, directrice générale de Fondation S - The Sanofi Collective, l'Opinion 28 mars 2024.

² Bedeau, L. (2024). The Veolia Institute FACTS Report on Environmental Health.