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New Delhi—Humanity currently faces multiple, interlinked existential crises. The catastrophic consequences of climate change, ecological degradation, and biodiversity loss have cascading knock-on effects on human health and well-being. As the COVID-19 pandemic illustrates, ecosystem damage can contribute significantly to a global public health emergency. But scientists are also increasingly finding that ecological restoration, by reversing the threats to soil, biodiversity, water, and other ecosystem services, can deliver major health benefits.

There have been many attempts to understand the nexus between ecological degradation and human health. A recent study of over 6,800 ecosystems across six continents provided further evidence that deforestation and extinction of species will make pandemics more likely. Ecosystem damage also leads to water contamination, creating breeding grounds for infectious diseases. Similarly, soil degradation not only reduces agricultural productivity, but also has been linked to disease and increased mortality.

The emergence and spread of zoonotic diseases like COVID-19 are closely associated with the health of ecosystems. For example, 75 percent of emerging infectious diseases are zoonotic, caused by unsustainable use of natural resources, factory farming of animals, and other industrial-scale anthropogenic factors.

Ecosystem decline has also contributed in recent decades to reduced immunological resilience and an increase in allergic conditions in humans. The effects are not limited to physical health, but also include mental health problems, such as an increase in eco-anxiety, or fear of environmental damage due to ongoing ecosystem degradation.

Conversely, restoring natural ecosystems could provide pathways for reversing some of the effects of climate change and ease the global chronic disease burden, thus improving human health and well-being. One recent study showed that soil restoration and the reintroduction of native plant species led to a reduction in physical and psychological impacts of certain diseases. In another case, ecological restoration of an urban river in northwest England was linked to psychological benefits for surrounding communities.

There is also evidence that ecological restoration can protect people from extreme climate events and related public health crises. Finally, using alternative cooking fuels such as biogas in improved stoves, thereby reducing the need for fuelwood and helping to prevent forest degradation, has been shown to improve respiratory health and household diets.

The economic case for ecological restoration is strong. Rising public health costs and the significant disease burden—exacerbated by the pandemic—strengthen the case further. The World Health Organization estimates that global spending on health rose continuously between 2000 and 2018, to $8.3 trillion, or 10 percent of world GDP.

In recent decades, researchers have developed various models—including the Mandala of Health, the Wheel of Fundamental Human Needs, and, more recently, the One Health approach—to capture the interconnected relationship between humans and nature. The challenge now is to

develop a unifying framework to maximize the synergy of ecological restoration and human health. Policies designed to address one should not exclude the other.

We, therefore, need to redefine ecological degradation, understand its far-reaching effects on human health, and recognize that these effects cannot be fully addressed without structured, context-specific ecological restoration plans. Achieving this will require institutionalizing and mainstreaming intersectoral collaboration between scientists and practitioners from the ecological, medical, and sustainability domains.

Alliances and a sense of ownership among core governance structures of public health and ecosystem restoration will be crucial. In India, for example, a pioneering effort to mainstream cross-disciplinary initiatives is bringing together the government, scientists, and local partners and practitioners with the aim of improving zoonotic-disease control. Such a framework can generate valuable knowledge and insights for similar collaborative initiatives elsewhere.

Ecological restoration is a clear and identifiable way to tackle the global disease burden and improve public health. As the UN Decade on Ecosystem Restoration commences, policymakers should encourage collective action to spur inclusive, interdisciplinary activities that demonstrate the positive global benefits of restoration for social, physical, and mental health. We owe it to ourselves and to the planet to mitigate at least some of the threats we have created. Project Syndicate



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