# Innovation as a tool to address the climate crisis

By Ludwig Federigan
January 29, 2022

OUR country remains under a state of public health emergency. After almost two years of living with Covid-19, we continue to struggle to go about our daily lives. But as we work together toward ending the global health challenge, we cannot afford to lose sight of climate change as it is a more disastrous and more lingering crisis.

Our planet has been ailing for more than a century and a half, starting when we began burning fossil fuels that released harmful greenhouse gases. This has led to extreme weather events, increasing temperatures and rising sea levels.

We recognize that our planet today is fast declining: 2021 was the sixth-warmest year on record and 2012-2021 was also the warmest decade on record, worsening the effects of climate change. Economic shocks from the pandemic have also set us back from achieving sustainable and resilient development.

This trend is set to continue and intensify due to increasing heat-trapping greenhouse gases in the atmosphere. The latest science warns that we barely have until 2030 before the window of opportunity for achieving the Paris Agreement's long-term 1.5 degrees Celsius temperature goal closes.

With the country situated in the Pacific typhoon belt, Filipinos have grown used to 20 or so typhoons entering the Philippine area of responsibility every year. What makes the new normal

different, however, is how warming oceans are fueling the storms' intensity. Combined with bad infrastructure and decades of short-sighted planning, we have become extremely vulnerable.

Ordinary people have limited understanding of this until they painfully experience extremely harsh weather, flooding, declining fish catches, water scarcity, fewer harvests, animal/plant extinctions, displacements, the loss of low-lying areas and even exacerbating health issues, among others. We expect the future to be even warmer and deadlier but exactly how much depends on the choices we make today and in the crucial months and years ahead.

We are currently confronting climate change along with Covid-19 and our resilience to both is intertwined with the growth of the world's economy. More lives are now at stake. There is no more fitting time than now to say that responding to these crises have become a moral imperative for governments and a social responsibility for all.

Conveying what the climate crisis is easy; enabling people to take action is the hard part. Even doing the easy part is already frustrating, especially when dealing with people who consider the crisis only as conceptual or an emergent issue. In light of the intensifying impacts of this climate crisis, we are required to do more.

Information and communication technologies (ICTs) have a great capacity to change economies, societies and cultures. These are inextricably woven into the lives of billions and have enabled the networks through which ever-increasing volumes of data and information flow at faster and faster speeds. The data are the bedrock around which new technologies revolve and new modes develop for business, communication, governance and also the environment.

Innovation can contribute and be a part of the response to climate change in different ways:

Using ICT in climate change mitigation. According to the Intergovernmental Panel on Climate Change, climate change mitigation means "limiting and preventing the emission of greenhouse gas (GHG) by enhancing activities that remove these gasses from the atmosphere." The primary sources of GHGs are in the energy, transportation, buildings, industry, waste management, agriculture and forestry sectors.

ICTs may help accelerate climate mitigation actions, including improving energy efficiency in buildings, alleviating traffic and improving public transportation in metropolitan areas and being the key element in operating smart grids.

Using ICT in climate change adaptation. Rising temperatures will have severe impacts on natural and human systems, leading to an increase in the likelihood of droughts, wildfires, extreme rainfall, floods and severe storms. Among the many expected consequences are food insecurity, the spread of infectious diseases and more climate refugees.

In this context, adaptation strategies and tools — defined as adjustments in human and natural systems — that moderate harm or exploit beneficial opportunities in response to actual or expected climate stimuli or their effects become as important as mitigation.

ICTs can help in the attempt to adapt to the impacts of climate change. They offer opportunities for knowledge-sharing and the timely exchange of information. ICTs can address food insecurity issues and be used in facilitating alternative financing. They can also support those affected by climate-related migration and urban infrastructural development. In the agriculture sector,

crowdsourcing and the use of drones are helping gather information and support those directly affected by climate change.

The contribution is not limited to these things. Like other professions, we have the ability to inspire change in the way our people live their lives or conduct their businesses by combining technical and communication skills to contribute to climate change solutions.

For example, we can create a platform where the potential significance of climate change to engineering practices can be discussed. We are also uniquely positioned to educate policymakers with our experience on what is necessary to design real-world innovations that deliver more efficient performance with fewer emissions and greater resiliency.

We can exchange knowledge and implement strategies. We must use every opportunity not just to gain knowledge but also to transform that knowledge into concrete actions. We are builders not just of the communities of today but also those of the future.

With the future of many generations at stake, we can be effective contributors to overall climate change action. We must take hold of the opportunity to responsibly manage our environment and lead the innovation toward making our nation and our planet resilient and sustainable.

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