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Climate adaptation is as important as climate mitigation

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While we need long-term solutions to really drag down our GHG emissions to meet our net-zero targets, it is important to realize the urgency of short-term adaptation measures to ensure that our society can be resilient enough to survive from the catastrophic damages directly or indirectly caused by climate change, writes Dr. Xander Wang. Photograph courtesy of Chris LeBoutillier, Unsplash.com

When it comes to climate change solutions, we typically focus on two categories: climate mitigation and climate adaptation. Climate mitigation is to tackle the root cause of climate change by reducing greenhouse gas emissions, while climate adaptation is to take adaptive measures to increase our societal resilience to the changing climate. In short, the former deals with the cause and the latter tackles the result.

Most of the time, we emphasize the importance of fixing an issue by addressing its root cause; otherwise, we are likely to see the issue happening again. Thus, it seems unquestionable to centralize our climate policies on reducing GHG emissions.

As a major milestone of COP21 in 2015, the Paris Agreement introduces an international framework to support a shift towards a net-zero emissions world. We are now eight years after the Paris Agreement entered into force in November 2016. While many countries, including Canada, have introduced their net-zero targets as a result of the Paris Agreement, the progress towards the implementation of these net-zero targets has been very slow.

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Although it is disappointing to see the slow progress in GHG emission reduction, we have learned that such a multilateral climate mitigation framework is likely to take decades to make tangible contributions. In the meantime, the GHG concentrations surged to a new record in 2023, which will no doubt continue to warm up the plant for many years to come.

Based on the observed records for temperature, it is clearly that the warming magnitude in Canada has almost been doubled compared to the global average. That is why we have seen the unprecedented increases in both the frequency and intensity of extreme weather events in recent years, such as heatwaves, wildfires, floods, droughts, and so on. Many communities from coast to coast are being damaged or even destroyed by these events.

Apparently, our net-zero emission policies won't protect our communities immediately from these catastrophic weather events. All the key infrastructure in our communities is designed with an assumption of stationarity, which assumes that the future climate would be the same as the past. Yet, such an assumption does not hold any more in the context of climate change. What should we do?

While we need long-term solutions to really drag down our GHG emissions to meet our net-zero targets, it is important to realize the urgency of short-term adaptation measures to ensure that our society can be resilient enough to survive from the catastrophic damages directly or indirectly caused by climate change.

The type and magnitude of climate change can vary significantly by regions and communities. We should understand the potential climate change impacts associated with individual communities, and take community-specific adaptation measures to enhance the climate resilience of our key infrastructure and protect local communities from catastrophic damages.

There are a lot of immediate actions we can take to support community-based climate adaptation. For example, Prince Edward Island has launched an innovative climate change tool named P.E.I. Climate Hazard & Risk Information System (CHRIS, available at). CHRIS provides province-wide information about coastal erosion, coastal floods, and inland floods with consideration of climate change, so that the general public can use the information to support their decision making towards property investment and protection. CHRIS has been used by more than 7,000 people since it was launched in March 2024. It helped raise public awareness of climate change and encourage people to take immediate climate actions. Prince Edward Island is the first province in Canada to offer such a comprehensive platform for climate hazard information distribution. Similar platforms can also be developed for other provinces and territories in Canada to support community-based adaptation measures.

To win the battle against climate change, we need both strategy and tactics. Climate adaptation is as important as climate mitigation.

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