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Climate — Global

A digital revolution to tackle climate change

Digital has a huge role to play in reaching a net-zero world. Alongside advancements in tech, we need bold, radical policy action to close the global digital divide

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A fisherman in General Santos City, Philippines, using electronic Catch Documentation and Traceability (eCDT). Fish are traced from catch to consumption, helping to protect marine environments and the livelihoods of those who depend on them. ©Melinda Donnelly/USAID Oceans

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The COVID-19 pandemic has triggered a global digital transformation. Economies, particularly developed ones, continue to function behind screens, through home deliveries and online payment systems. Businesses and offices operate online, while children receive education via interactive group video call platforms. As governments in these developed countries have intervened to impose physical social distancing, many people have worked from home and interactions have become digital.

While digital platforms and online-based activities surged during the pandemic, fossil fuel consumption and carbon emissions plummeted, due to the lockdowns, travel restrictions, and other forms of immobilities. With less physical interference by humans, the natural world was able to flourish. Cities previously plagued with high levels of air pollution saw skies clear as the air freed itself from carbon. Reduced human activities led to increased fish and animal activities on seashores and riverbeds. Nature was rejuvenating itself without human interaction, and the climate slightly restored.

Challenges for climate-vulnerable countries

While developed nations rapidly moved to digital platforms during the pandemic, numerous developing and least developed countries (LDCs) could not afford to do the same at a similar scale, thus producing less positive climate contributions. Ironically, the 48 most climate-vulnerable countries – representing the Climate Vulnerable Forum (CVF) – are almost all developing countries or LDCs. However, the CVF nations – under the current Bangladesh Presidency – are trying to pursue other nations to keep their climate promises: be it the nationally determined contributions (NDCs) of the Paris Agreement or the USD 100 billion of climate finance pledged per year by developed countries.

The CVF did not stop fighting for climate change, despite the ongoing COVID-19 pandemic. The CVF Presidency has been encouraging other member CVF countries to develop climate action plans for the decade and also has created the CVF-COP26 solidarity to pressure the Conference of the Parties' (COP) nations to commit to their NDCs ahead of the Glasgow summit. The CVF also hosted the first-ever **finance summit of the V20** (https://www.v-20.org/) (a sub-group

representing the 20 most vulnerable countries) to discuss alternate financial arrangements for their climate adaptation actions.

Technology-empowered green energy for achieving climate goals

To obtain the maximum advantage from technological progress, technological aspects need to be incorporated into policymaking. The COP21 Paris Agreement commitment to limit global warming to well below 2°C compared with pre-industrial times is a difficult target to achieve unless countries take significant and rapid actions. The digital transformation drive might just be the key to achieve that. **Digital technology itself has the potential to cut global emissions by 15%** (https://www.weforum.org/agenda/2019/01/why-digitalization-is-the-key-to-exponential-climate-action/), according to the World Economic Forum. The rapid growth in digital economies around the world as a result of the pandemic could therefore make a significant contribution to climate action.

Indeed, the digital economy, driven by a boom of internet-based economic activities, resulted in a significant reduction in carbon emissions during the pandemic. Just as power plants are transforming from carbon-exhausting fossil fuels to renewable energies, digitally transformed economies have the potential to be not only carbon neutral but also carbon negative as they only consume electricity for power. Numerous countries are moving to renewable energy as part of their NDCs and other climate commitments.

India is spearheading the development of renewable energy through solar-based power plants, co-leading the International Solar Alliance with France. Even China, one of the largest carbon emitters, has pledged to stop building coal-based power plants. While economies like India and China move towards more climate-friendly technological policies, and developed economies invest heavily in green energy, LDCs and low-income developing countries struggle to introduce technology-driven, climate-friendly policies and actions. LDCs and low-income countries should have access to the opportunities arising from digital transformation, especially given the drive to digital that the pandemic has unleashed.

Need for a global, holistic, multi-stakeholder approach

As major economic activities go digital – be they work, school, or commerce – the need for travel will reduce, significantly cutting carbon emissions. Even data centers, one of the lynchpins of the digital economy, are climate-friendly, with many now carbon neutral or committing to be soon. The Swedish EcoDataCenter, meanwhile, is the world's first carbon-negative data center running entirely on renewable energy. It gives a peek at how a digital world of the future has the potential to be climate-friendly if we use technology to our advantage.

While developed economies enjoy climate-friendly technological advancements, there needs to be policy-driven actions for developing countries and LDCs – particularly nations of the CVF. Technological advancements in developing countries and LDCs need to be subsidized and supported by government policies, in addition to existing climate measures such as CVF countries' own climate prosperity plans. Developing countries and LDCs need subsidy funding from the USD 100 billion climate finance pledge.

The governments of the developing countries and LDCs also need to partner with the corporate sector to facilitate digital transformation, be it an adaptation to the core business or as part of corporate social responsibility activities. Tech giants like Google and Facebook have already offered some staff the option to work from home long term, while many others are considering a hybrid model. Governments have the opportunity to support home working, online education, and e-commerce through adopting the right policies and commissioning projects to build both digital infrastructure and capacity.

If policies support these post-pandemic digital transformations, technological advancements would be much more sustainable for the climate of both developed and developing economies. Both sets of countries will need to find a way to complement each other's initiatives and efforts in a manner that is just, fair, and equitable towards tackling climate change effects. In that process, technology can be a cost-effective harbinger of providing climate-friendly solutions that can be achieved with fewer resources and more accessibility. One of the few good things that the pandemic has done is to give us a glimpse of what that may look like. Now the challenge is on us. We must scale it up so that technological advancements and policy reforms reinforce and not frustrate each other. Through this, climate-friendly policies can be reinvigorated by the new generation of digital transformation technologies.

About the author

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An MBA from the Wharton School of Business, Professor Khasru heads the Institute for Policy, Advocacy, & Governance (IPAG). He is a Global Expert of the World Economic Forum (WEF) and Member of SDG's Global Councils, Council for Global Problem Solving (Germany), & Energy Leaders' Forum, Asian Development Bank. Professor Khasru is Co-Chair of the G20 Task Force for Digital Transformation and has written six policy briefs for the G20 Leadership Summits 2017-2020.

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