

Introduction:

The existential threat posed by anthropogenic climate change is unequivocal according to the overwhelming scientific consensus endorsed by every national academy of sciences (Intergovernmental Panel on Climate Change, 2022). Decades of continuous greenhouse gas emissions have disrupted the Earth's climate system to such a degree that risks to the environment, economic stability, geopolitical order and human security now endanger the very foundations of modern civilization. However, establishing an effective policy response to this planetary emergency demands addressing it with utmost concern, especially when balancing environmental protection, economic viability and social welfare considerations (Geden & Löschel, 2022). Only through the adoption of multidimensional solutions can national and international stakeholders hope to navigate a transition to climate-safe, sustainable energy and development models while minimizing harm and maximizing well-being across societies.

Emerging Risks of a Warming World

On the environmental front, the risks are immense and growing. Rising sea levels, already rising at an accelerating rate due to the melting of glacial ice, endangering many of the world's coastal megacities as well as entire low-lying island nations as early as mid-century if drastic emissions reductions are not achieved (Cazenave et al., 2018). As global temperatures climb higher, alarming new research suggests we may breach additional tipping points in the stability of the Antarctic and Greenland ice sheets that could multi-meter sea level rise this century (Robinson et al., 2012). Simultaneously, intensifying extreme weather events like hurricanes, cyclones, and wildfires will likely increase in both frequency and severity with every fraction of a degree of additional warming (Bobb et al., 2022). Moreover, climate change threatens to disrupt broader climate systems upon which global food and water security depend. If critical patterns succumb to unrelenting greenhouse emissions, cascading humanitarian crises could ensue through water scarcity and reduced agricultural productivity. The security and well-being of populations in LICs are least likely to be able to adapt with the compounding environmental impacts due to lower resilience and resources to cope with serious climatic shifts.

Rewiring Globalized Economies

Economists have made important strides in quantifying some of the immense costs that will be incurred under a changing climate through the continued refinement of integrated assessment models (Dell et al., 2014). By employing emerging evaluative frameworks such as the Task Force on Climate-Related Financial Disclosures (TCFD) and Task Force on Nature-Related Financial Disclosures (TNFD), economists and policy makers can better quantify and disclose climate-attributed financial risks. However, long-term uncertainty remains high regarding the difficulty in measuring externalities in dollars and the problem of asymmetric information constraining efficient market outcomes. Indeed, the Harvard Business Review has stated that the 'data underlying ESG ratings are incomplete, mostly unaudited, and often dated', emphasizing how ESG reports are sometimes inaccurate and often untested. Therefore, this emphasizes the urgency for proactive transition management to safeguard the vital economic and social lifelines of our society. As policies of shifting to renewable energy and low-carbon industries accelerate, policymakers must simultaneously ensure an equitable transition for fossil fuel sector workers and firms which considers retraining, reskilling and regional economic development initiatives to cushion inevitable disruption. With entire communities and some of the world's largest industries deeply dependent on continued high-carbon development, thoughtfully managing this "creative destruction" will be crucial to maintaining public support and cooperation throughout the transition process.

Navigating Geopolitical Fault Lines

On the international stage, negotiating effective climate policy amid geopolitical realities is complex. Tensions arise between moral principles of shared responsibility and long-held Westphalian notions of absolute national sovereignty, particularly over matters of energy production and use (Philibert, 2017). While existential climate threats facing humanity demand strengthened multilateral cooperation under frameworks like the Paris Agreement and the Kunming Montreal global biodiversity framework, differentiating capacities across nations and the rise of populist nationalism in some countries threaten to imperil the collective will required for decisive global action (Michaelowa & Michaelowa, 2017). Domestically, elected leaders face a similarly daunting governance challenge to strike the optimal policy calibration. Overly ambitious emissions reduction regulations risk is proven to be unachievable, while modest regulatory reforms that fail to internalize environmental externalities may cause a loss in confidence from stakeholders towards transitioning to a low-carbon economy. Navigating these fault lines will require balanced, evidence-based policymaking that protects social and economic welfare throughout the transition billions from poverty.

Towards Sustainability with Wisdom

Fortunately, nature remains humanity's firmest ally in the urgent transition already underway. Through the intentional deployment of "natural climate solutions" like large-scale reforestation, grassland restoration, urban greening initiatives and regenerative agricultural practices that rebuild soil carbon stocks, vast amounts of carbon can be removed from the overburdened atmosphere whilst simultaneously increasing socio-ecological resilience to climatic disruption (Griscom et al., 2017). By methodically reconnecting industrial infrastructure and economic activity to the inviolable biophysical guardrails of our planet through such "green infrastructure" investments, leaders of industrialized nations can pioneer pathways to sustainable development that decouple prosperity from environmental degradation (Gracceva & Zenie, 2014). With prudent and definitive decision-making, there is hope that this enormous challenge of the climate crisis can be solved. With ambitious initiatives to reduce carbon emission and transition to post-carbon technologies, we may secure the conditions necessary for a sustainable and viable future.

In conclusion, while navigating the mutually influential environmental, economic and geopolitical complexities associated with climate change and the transition to global sustainability poses immense difficulties that should not be underestimated. Evidence-based policymaking is required by all nations to provide the necessary morality that should be underlined within society. With mutually agreed international cooperation under frameworks like the Paris Agreement and amendments that effectively prioritize a civil transition, there remains many genuine opportunities for humanity to collectively avoid the precipice of catastrophe and protect the long-term viability of modern civilization and provide a sustainable future.

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