Confronting Current Crises and Critical Challenges of Climate Change

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ABSTRACT

Climate change heightens global warming and brings about impending risks for both human society and natural systems. Climate change is the greatest threat modern humans have ever faced. Pollutant discharges involve the global atmosphere and result in the challenge of global warming that must be solved before it results in irreversible damage. Current common threats of crises need common actions among all of us: every continent, every country, every community, and every common citizen. The earlier an action, the larger its impact. This review article scrutinizes the newest developments in this paramount important research area and provides directions for future research.

KEYWORDS

Air Pollution, Circular Economy (CE), Citizen Actions, Climate Change, Ecological Engineering, Global Warming, Greenhouse Gas (GHG), Negative Emission Technology, Renewable Energy

INTRODUCTION

There are two serious and intertwined global environmental issues that affect human health: climate change and air pollution. Climate change can compound air pollution via climate penalty. Appropriate climate policy can reduce air pollution and provide co-benefits for human health and the economy. However, natural variability complicates the effects of climate policy on air pollution and its associated health impacts. A major cause of climate change is greenhouse gas (GHG) emissions, including carbon dioxide, nitrous oxide, and methane, as they pile up in the atmosphere due to economic activity and reradiate the sun's energy (Castle & Hendry, 2022). Numerous unexpected and irreversible ecosystem impacts lead to natural calamities such as extreme weather events (heat waves, hurricanes, cyclones, tornados, tsunamis, floods, droughts), wildfires, mass migration, crop failure, food and water security, biodiversity loss, coastal erosion, shrinking of glaciers, rising sea-level, thawing of permafrost, ocean acidification, increases in vector-borne diseases, altitudinal and poleward shifts of animal and plant ranges, and political crises (Mandal et al., 2021).

The United Nations issued a glaring warning on climate change on August 9, 2021, with a call for urgent and speedy large-scale action on cutting emissions. The Intergovernmental Panel on Climate Change's (IPCC) report put the blame indisputably on human activity and U.N. Secretary-General António Guterres said the findings were a "code red for humanity." Some changes are already locked in, with Greenland's land-ice sheet expected to keep melting, leading to rising sea levels. Heat waves that occurred once in 50 years are now happening every 10 years. Currently, the Dixie Fire in California is now the second-largest wildfire in the state's history and could take weeks to contain. And the harshest heat wave in 30 years is leading to damaging wildfires across Greece and Italy.

According to Hanberry (2022), the threshold of a tipping point is around the 36 °C maximum monthly temperature. However, most land areas on the earth will surpass this threshold on the fossil-fueled pathway, maybe 70 years from now. Given the current pathway, the author's analysis indicated that most land areas may tip beyond a maximum monthly temperature of 36 °C by 2081–2100 or be deferred until the early 2100s at best. Swift decarbonization using existing technologies is crucial to alter the trajectory from the maximum monthly temperature threshold, which will inflict ecological and socio-economic costs of climate damage.

As a result of human actions and the associated energy consumption, especially in the last century, the world has faced serious environmental problems, particularly carbon dioxide (CO_2) emissions (Sterin and Lavrov, 2020). Environmental sustainability is an increasingly important dimension in both business and political decision-making. Efficient environmental policy, regulation, and management critically depend on reliable information (Kuosmanen and Zhou, 2021). Research in the field of environmental sustainability has shifted from a country's perspective to a global perspective (Sarkodie, 2018). United Nations, in their sustainable development goals (SDGs), focused on creating human and industrial capacity, improving education, and reducing the impact of climate change and environmental changes (Answer et al., 2021).

Climate change presents such an immense threat to us and the need to reduce the pace of warming is so pressing. There is an urgent need to investigate the issue of climate change from different perspectives as they provide the academic and practice communities with the needed knowledge to understand the issue holistically. Policymakers in various economic and social fields are encouraged to coordinate their policies to balance achieving prosperity for their communities with the environmental implications of those policies (Alotaibi and Alajlan, 2021).

The timeframe set under the United Nations Framework Convention on Climate Change (UNFCCC) is to become net zero (the state in which greenhouse gases going into the atmosphere are balanced by removal from the atmosphere) by 2050 (United Nations, 2022). Meeting that target could help stave off the starkest predictions of a climate disaster — extreme weather, toxic air, uninhabitable regions, and conflicts over resources like food and water. It could lead to a rosier future, with clean energy that powers vehicles, homes, and businesses as well as new industries and more jobs.

RESEARCH METHODOLOGY

Content Analysis has been applied in a variety of topical contexts over the years. Technological advances and prolific application in mass communication and personal communication have renewed the attractiveness of research in Quantitative Content Analysis recently. Social media and mobile devices have attracted more and more users. Content Analysis of textual big data faces new challenges. It is considered a quantitative method because it can be used to identify the statistical frequency of thematic or rhetorical patterns (Boettger and Palmer, 2010).

As Salem et al. (2022) indicate, content analysis is a research method that provides a systematic and objective means to make valid inferences from verbal, visual, or written data in order to describe and quantify specific phenomena. Also, it is a widely used qualitative research technique to explore group, individual, societal, or institutional attention (Hsieh and Shannon, 2005; Downe-Wamboldt, 1992; Weber, 1990).

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