Navigating The Escalating Climate Crisis: Comprehensive Policy Responses And Collaborative Global Action For A Sustainable Future

Irma Rachmawati Maruf[1], Avid Leonardo Sari[2], Agusfian Saptayuda[3], Marsi Adi Purwadi[4], Andi Susilawaty[5]
Magister Kenotariatan Universitas Pasundan[1], Universitas Islam Negeri Sunan Gunung Djati Bandung, Indonesia[2], GoAcademica Research & Publishing[3], Universitas Cenderawasih[4], UIN Alauddin Makassar[5]
Email : Irma.rachmawati@unpas.ac.id

Abstract

The escalating climate crisis has become one of the greatest challenges of this century, having far-reaching negative impacts on the environment, human health, food security, and the global economy. The response to this crisis requires a deep understanding of the dynamics of climate change, as well as comprehensive and collaborative policies and actions at the global level. Therefore, it is important to evaluate and identify effective strategies to mitigate the impacts of climate change and move towards a sustainable future. This research aims to explore comprehensive policy responses and collaborative global action to navigate the climate crisis toward a sustainable future. The research method used is qualitative, by collecting and analyzing data from relevant research results and previous studies. The results of this research found that efforts to overcome the climate crisis require a comprehensive approach, involving strong international cooperation and synergy between development policies. Transitioning to clean energy, sustainable management of natural resources, and increasing community resilience to the impacts of climate change were identified as key strategies. Education and increasing public awareness are also important elements in supporting behavior change and community participation. Technology and innovation play a vital role in creating efficient and sustainable solutions. Finally, adequate funding and innovative funding mechanisms are needed to support the effective implementation of climate policies and initiatives.

Keywords: *Climate Change, Policy, Global Action, Sustainable Future.*

A. INTRODUCTION

Climate change is one of the greatest challenges facing humanity in the 21st century, with far-reaching and complex impacts on the environment, economies and societies around the world. This escalating climate crisis is characterized by extreme weather events, rising global temperatures, rising sea levels, and unpredictable changes in weather patterns, all of which contribute to the vulnerability of ecosystems and human life (Adamo et al., 2021). In recent decades, the world has seen more intense and more frequent heat waves, more widespread and devastating forest fires, stronger storms, more severe floods, and longer droughts. These events not only cause significant material losses but also affect people's health and welfare, threaten food

and water security, and result in large-scale population displacement (Gulzar et al., 2021).

Global temperature rise, which is the main indicator of climate change, has exceeded the threshold considered safe by scientists and researchers. The primary driver of this occurrence is the release of greenhouse gases due to human actions, including the combustion of fossil fuels, clearing of forests, and extensive farming practices. Elevated levels of greenhouse gases enhance the greenhouse effect, thereby raising the Earth's surface temperature (Barbarossa et al., 2021). The consequences of climate change vary globally, with developing nations and the most susceptible populations experiencing the highest levels of risk. Due to limited adaptation and mitigation capacity, as well as high dependence on natural resources, these countries are experiencing greater difficulties in dealing with the impacts of climate change. This raises questions about climate justice and shared but differentiated responsibilities in addressing the climate crisis (Scoville-Simonds et al., 2020).

Global responses to the climate crisis have varied, with some international initiatives such as the Paris Agreement aiming to reduce greenhouse gas emissions and limit global warming. However, global efforts are often hampered by national interests, political disagreements, and challenges in implementing effective climate policy. This highlights the need for stronger international cooperation and collaborative action between countries, the private sector, non-governmental organizations, and civil society. A sustainable future requires a comprehensive transformation in the way we produce and use energy, manage natural resources, and design our cities and communities (Santos et al., 2022). Addressing the climate crisis requires innovative and adaptive approaches, which not only reduce environmental impacts but also increase society's resilience to climate change. Comprehensive policy responses and collaborative global action are key to navigating this escalating climate crisis and forming the foundations for a sustainable future for current and future generations.

B. LITERATURE REVIEW

1. Climate Change

The term climate change became known to the public after the Earth Summit was held in Rio de Janeiro in 1992 which resulted in Agenda 21. At a meeting attended by 103 Heads of State and 179 representatives of UN member countries, one of them resulted in an agreement on the need to reduce greenhouse gas emissions which are the cause of climate change. The climate change process needs serious attention because its impact will be felt in all sectors, including agriculture (Castillo Esparcia & López Gómez, 2021).

The Intergovernmental Panel on Climate Change (IPCC) describes climate change as a shift in climate patterns, marked by changes in either the average state or the variability of climate properties, persisting over extended durations. The Ministry of the Environment characterizes climate change as alterations in the Earth's

atmospheric physical conditions, including changes in temperature and the distribution of rainfall, impacting various aspects of human life over sustained periods (Pepin et al., 2022). The National Aeronautics and Space Administration (NASA) views climate change as a variation in the average of one or more meteorological elements in a specific region, whereas global-scale climate change refers to such changes affecting the entire planet. Common indicators of climate change include a rise in surface air temperatures and sea levels. Indonesia experiences a higher degree of fluctuation in rainfall compared to other climatic factors like temperature, pressure, and humidity (Jones et al., 2022).

It has been previously stated that emissions of greenhouse gases significantly contribute to climate change. These gases are known for their role in the greenhouse effect. The Kyoto Protocol identifies six greenhouse gases that should be controlled to mitigate climate change. These gases include CO2 (carbon dioxide), CH4 (methane), N2O (nitrous oxide), HFCs (hydrofluorocarbons), PFCs (perfluorocarbons), and SF6 (sulfur hexafluoride) (Shen et al., 2020). Among these, carbon dioxide is recognized as the most critical greenhouse gas due to its predominant role in the amplification of geothermal warmth. Carbon dioxide is predicted to have a contribution of 83 percent of the radiative causes of greenhouse gases in 1994. Methane has a contribution of 15 percent, and other gases are considered to have insignificant contributions (O'Sullivan et al., 2021).

The atmosphere of our planet naturally includes greenhouse gases, such as water vapor or H2O. Yet, H2O gas is not deemed a significant greenhouse gas for the purposes of forecasting climate change. The reason lies in the short atmospheric lifetime of H2O, which is only about 9.2 days (Nelson, 2023). In contrast, other greenhouse gases persist much longer in the atmosphere. For instance, carbon dioxide remains for around 100 years, methane for about 15 years, and nitrous oxide for approximately 115 years. Given the extended lifespan of these gases, once they accumulate as greenhouse gases, their impact on the climate can last for a prolonged period (Gaillot et al., 2023).

Emissions of greenhouse gases are expected to rise in the future, driven by the growing demand for food. Factors contributing to this surge include the use of marginal lands, a rise in meat consumption, and international trade policies that lead to increased energy consumption for transport (Bjelle et al., 2021). Hence, it is crucial to focus not only on reducing greenhouse gas emissions from the agricultural sector through mitigation efforts but also on investigating and evaluating the agricultural sector's capacity and efficiency in absorbing these gases. Additionally, the role of agriculture in influencing climate and environmental health through its multifunctionality should be thoroughly assessed (Malhi et al., 2021).

2. Sustainable Development

Sustainable development has evolved to encompass multiple definitions over time. As defined by the President's Council on Sustainable Development in the United States, it refers to a developmental approach that aims to enhance economic growth

while ensuring environmental sustainability and social well-being, benefiting both current and future generations (Tsindeliani et al., 2022).

The World Conference on Sustainable Development in 2002, held in Johannesburg, marked a renewed global commitment to sustainable development. The conference endorsed a plan to incorporate sustainability principles within the framework of sustainable development, embodying the integration of its three foundational pillars: economic growth, social inclusion, and environmental protection. This integrative approach seeks to balance these dimensions within a development model where they are interdependent (Yu et al., 2020). Sustainable development is fundamentally rooted in systems thinking, emphasizing the necessity of considering the interconnectedness across space and time globally. This perspective is crucial for understanding the dynamics between the environmental, social, and economic pillars to foster positive outcomes from developmental activities. Following this philosophy, the United States Environmental Protection Agency (USEPA) advocates for sustainable development by focusing on six key aspects across each of these pillars to guide development practices (Van Zanten & van Tulder, 2021).

The details of these development pillars include the following:

a) Environmental Pillar

1) Ecosystem services involve safeguarding, maintaining, and enhancing the environmental quality of habitats and ecosystems, including addressing the effects of hydraulic fracturing.
2) Environmentally sound techniques and chemicals: Develop chemical products and processes to reduce the dangers of chemicals, reuse or recycle chemicals, reduce the impact of dangerous chemicals, and regulate chemical levels appropriately. Such as the relationship between the impact of human activities on the environment.
3) Air quality efforts aim to reach and uphold air quality standards that are jeopardized by air pollution, including implementing strategies to mitigate the effects of gas emissions.
4) Water quality: Reducing the impact of negative contamination of drinking water, including protecting water sources such as fish and shellfish and other matters related to water reactions
5) Pressure: Minimize the impact of societal pressures such as pollution, greenhouse gas emissions, and genetically modified organisms on ecosystems, including understanding how modified nanoparticles behave in aquatic environments.
6) Resource integrity: Mitigate negative consequences through waste minimization, enhanced recycling efforts, effective waste management, and the restoration of resources affected by both deliberate and accidental incidents (Caldwell et al., 2022).

b) Economic Pillar

1) Employment: Creating or maintaining current or future employment.

2) Incentives: Creating incentives that align with human behavior to promote sustainable activities, such as conservation reserve programs and the promotion of sustainable forestry practices.
3) Supply and Demand: Implementing pricing or market changes to enhance economic performance, environmental sustainability, and social well-being.
4) Natural Resource Accounting: Integrating the depreciation of natural capital and the value of ecosystem services into accounting measures and cost-benefit analyses, for instance, through the valuation of environmentally sustainable national products.
5) Cost: Achieving a beneficial impact on the costs associated with processes, services, and products, for example, by innovating towards zero-waste processes to negate the need for regulatory expenses.
6) Pricing: Encouraging pricing models that reflect the external costs of production, such as laws aimed at recycling drink containers, both within the United States and globally (Borenstein & Bushnell, 2020).

c) Social Pillar

1. Environmental Justice: Ensuring the well-being of communities disproportionately affected by pollution through empowerment and collaboration with local, state, tribal, and federal agencies to foster healthy, sustainable environments.
2. Human Health: Focusing on the protection, upkeep, and enhancement of human health, including the use of models to foresee developmental toxicology impacts.
3. Participation: Engaging in open and transparent methods that include all relevant parties, such as building a database for safer pesticides in widespread use, thereby enhancing public access to and comprehension of sustainability practices.
4. Education: Elevating awareness and understanding of sustainability among the general public, stakeholders, and groups that may be affected, for instance, by offering educational programs on sustainability to students.
5. Resource Security: Safeguarding, conserving, and rehabilitating access to essential resources like food, land, and energy, and examining the effects of dispersant/oil mixtures on aquatic environments.
6. Sustainable Communities: Encouraging the development and design of communities that support sustainable lifestyles, through measures such as using native plants for landscaping and constructing eco-friendly buildings (Dushkova & Haase, 2020).

C. METHOD

To navigate the escalating climate crisis and identify comprehensive policy responses and collaborative global action for a sustainable future, this research will be conducted using a qualitative approach. This methodology was chosen because it allows for in-depth analysis of complex social phenomena related to climate change, the policies that have been implemented, and the dynamics of global collaboration

that has been or needs to be carried out. The data used in this research comes from various research results and previous studies which still have relevance to the content of the research. These data sources will include scientific publications that have made significant efforts to address the climate crisis. After the research data has been successfully collected, the data will then be processed to produce a synthesis of information that can provide new insights into effective strategies and approaches in dealing with the climate crisis. Through this approach, research is expected to produce evidence-based recommendations to improve international cooperation, increase the effectiveness of climate policy, and promote more inclusive and sustainable global action.

D. RESULT AND DISCUSSION

1. The Urgency of Handling the Climate Crisis

The swift and unregulated expansion of urban areas has led to numerous profound effects on both environmental integrity and human well-being, particularly concerning mental health issues. The growth of major urban centers frequently correlates with a rise in the occurrence and severity of natural disasters, including floods, droughts, storms, and heatwaves. These events threaten not only the resilience of ecosystems but also the safety and lives of the people residing in these areas (Iamtrakul & Chayphong, 2023). The climate crisis, exacerbated by excessive urbanization, has direct consequences for the availability and security of food and water, two basic elements that are critical for human survival. The instability of food production due to climate change, as well as the decline in the quality and quantity of clean water, increases risks to food security and creates new challenges in ensuring access to safe, clean water for everyone.

The impact of urbanization and the climate crisis on public health is very broad, including the spread of disease, nutritional problems, and stress due to excessive heat. Hotter environmental conditions and increased air pollution as a result of greenhouse gas emissions and population density in urban areas contribute to the increasing prevalence of respiratory diseases, cardiovascular diseases, and mental health problems, including anxiety and depression. Heat stress, in particular, has become an increasingly recognized public health issue, with more frequent and intense heat waves posing immediate health risks, including dehydration, heatstroke, and even death. Additionally, limited access to green spaces in urban environments negatively impacts psychological well-being, reducing opportunities for relaxation and recreation that are so necessary for good mental health.

Economically, the impacts of uncontrolled urbanization and the climate crisis are quite significant, placing additional pressure on local and global economies. The increasing economic losses from natural disasters, both in terms of damaged infrastructure and lost productivity, require the allocation of substantial resources for adaptation and mitigation. The costs of rebuilding after disasters, as well as the investments required to make cities more resilient to climate change, highlight the

heavy economic burden that communities and governments must bear. This, in turn, can exacerbate social inequalities, with economically disadvantaged communities facing greater difficulty recovering from the impacts of natural disasters and adapting to changing climate conditions.

In this context, the dynamics of ongoing urbanization require serious attention to its impact on people's mental health. Chronic stress resulting from uncertain access to food and water, economic instability, and physical health threats from climate change all contribute to an increasing mental health burden. The importance of targeted interventions to address the mental health impacts of urbanization and the climate crisis cannot be understated, requiring a multidisciplinary approach involving collaboration between policymakers, health professionals, and communities to develop effective and inclusive adaptation strategies. Through a comprehensive and proactive approach, communities can better face the mental health challenges posed by urbanization and climate change, ensuring environmental and social well-being and sustainability for current and future generations.

2. Evaluation of Global and National Climate Policies

In facing the increasingly urgent climate crisis, evaluation of global and national climate policies is important to ensure that efforts to reduce the impacts of climate change are effective and inclusive. Existing policy frameworks, which include international agreements such as the Paris Agreement, aim to limit global warming to no more than 1.5 degrees Celsius above pre-industrial levels (Owen, 2020). At the national level, many countries have developed their initiatives, ranging from carbon taxes to renewable energy development, to fulfill their commitments under the treaty. However, despite significant progress in establishing this policy framework, there are still significant gaps and challenges in its implementation.

Gaps in climate policy often relate to capacity and resources. Developing countries, for example, may face difficulties in allocating sufficient funds for climate initiatives due to their budget constraints. Additionally, issues of justice and inequality are becoming increasingly prominent, given that the impacts of climate change are likely to be felt most acutely by those who have contributed the least to the problem. This challenge requires a more inclusive and equitable approach to climate policy, which considers not only the reduction of greenhouse gas emissions but also the adaptation and resilience of society to climate change.

The importance of policy synergy becomes clear when considering the complexity and multidimensionality of the climate crisis. Climate policy cannot stand alone; instead, it must be integrated with other development policies, including economic, social, and environmental policies. This integration ensures that efforts to reduce the impacts of climate change go hand in hand with advancing sustainable development, avoiding unnecessary trade-offs, and maximizing cross-sectoral benefits. For example, policies that support the transition to clean energy not only reduce emissions but can also generate job growth and improve energy security.

The role of technology and innovation in supporting climate policy implementation cannot be ignored. Advancements in renewable energy, energy efficiency, and carbon capture and storage technologies present fresh avenues for lowering greenhouse gas emissions, paving the way for a swift shift towards a low-carbon economy. Innovations in information and communications technology can also strengthen adaptation efforts by increasing access to climate-related information and strengthening community capacity to respond to climate change. However, for technology and innovation to contribute effectively, policies are needed that support research and development, facilitate technology transfer, and encourage the adoption of clean technology through incentives and innovative financing mechanisms.

In facing the climate crisis, global and national climate policies need to be responsive, inclusive, and adaptive. Continuous evaluation of existing policies, identifying gaps and challenges, and integrating climate policy with other development policies are key steps to ensure that global efforts to address climate change are effective. By leveraging technology and innovation and ensuring policy synergy, we can increase global resilience to climate change and build a sustainable future for all.

3. Global Collaborative Initiatives and Actions

In overcoming the monumental challenges posed by the climate crisis, global collaborative initiatives and actions are key to achieving effective and inclusive solutions. Models of international cooperation have evolved, demonstrating the important role of international organizations, global alliances, and multilateral frameworks in mediating and facilitating joint efforts (Rangel-Buitrago, 2023). Organizations such as the United Nations through the UNFCCC (United Nations Framework Convention on Climate Change) have become important platforms for global climate policy negotiations, while initiatives such as the Clean Energy Alliance illustrate how collaboration between governments and the private sector can accelerate the energy transition. This cooperation model not only strengthens global commitment but also enables the exchange of knowledge and best practices between countries.

The private sector and civil society are playing an increasingly prominent role in the global response to climate change. From companies innovating green technologies to non-governmental organizations mobilizing civil society action, their contributions are critical in carrying the burden of mitigation and adaptation. Initiatives such as business coalitions for net zero emissions and environmental awareness campaigns conducted by NGOs show how non-state actors can fill action gaps and drive policy change. Collaboration between government, the private sector, and civil society can strengthen policy implementation, accelerate innovation, and ensure broad societal participation in climate efforts.

Capacity building and technology transfer are important pillars of international cooperation for climate action. Developing countries often face resource and technological constraints to implementing effective climate solutions. In this

context, international cooperation that facilitates technology transfer from developed to developing countries is very important. Programs such as the Clean Development Mechanism (CDM) under the Kyoto Protocol are examples of how technology and knowledge transfer can be accelerated. Capacity building through training, education, and infrastructure development enables more vulnerable countries to strengthen their climate resilience and participate more actively in the low-carbon economy.

Funding climate action is a significant but crucial challenge. Financing mechanisms for climate action, including international financing and green investment, play a key role in mobilizing the necessary resources. The Green Climate Fund (GCF), for example, is designed to support mitigation and adaptation projects in developing countries, providing a concrete example of a global financial commitment to tackle climate change. On the other hand, carbon and green bond markets offer opportunities for the private sector to invest in climate solutions, showing how innovative financial tools can raise critical funds. Collaboration between international donors, investors, and fund recipients is essential to ensure that funding is allocated efficiently and with impact.

Through international cooperation, private sector and civil society contributions, capacity development, technology transfer, and strong funding mechanisms, global collaborative action on the climate crisis can be strengthened. Creating synergy between initiatives, increasing transparency and accountability in implementation, and ensuring fair and inclusive participation of all stakeholders are critical steps towards achieving global climate goals and building a sustainable future for all.

4. Strategy Towards a Sustainable Future

Facing the climate crisis requires a comprehensive strategy that includes the transition to clean and sustainable energy as one of its main pillars. This strategy not only focuses on reducing greenhouse gas emissions through the use of renewable energy such as solar, wind, and hydro power but also on increasing energy efficiency in all economic sectors (Kabeyi & Olanrewaju, 2020). This transition requires massive investments in clean technologies, new energy infrastructure, and renewal of the electric grid system to integrate renewable energy sources. Additionally, government policies and incentives can accelerate the adoption of clean energy, such as subsidies for renewable energy, carbon taxes that reduce dependence on fossil fuels, and regulations that encourage energy efficiency. The transition to clean energy not only reduces emissions but also offers new economic opportunities, creates jobs, and increases energy security.

Sustainable management of natural resources is another critical component in the strategy towards a sustainable future. This includes environmentally friendly agricultural practices that reduce the use of synthetic pesticides and fertilizers, implement agroforestry systems, and increase biodiversity. In the forestry sector, sustainable forest management and reforestation can serve as an important carbon sink, while also preserving natural habitats and increasing resilience to climate

change. Water conservation and efficient management of water resources are also crucial, considering that climate change can exacerbate water availability problems. Sustainable management of natural resources not only helps in mitigating climate change but also ensures that these resources can continue to support human life and ecosystems.

Increasing community adaptation and resilience to the impacts of climate change is an important aspect of strategies towards a sustainable future. This involves building infrastructure that is resilient to climate change, such as better flood management systems, buildings that can withstand natural disasters, and agricultural systems that can withstand extreme weather conditions. Developing contingency plans and early warning systems for natural disasters can save lives and reduce economic damage. Strengthening community resilience also means ensuring access to critical resources such as clean water and health services, as well as supporting communities in adapting to more sustainable practices.

Education and increasing public awareness are the foundations that enable all of these strategies to be effective. Through education, individuals can understand their role in the climate crisis and how they can contribute to the solution, both through changes in daily behavior and participation in environmental initiatives. Awareness campaigns can help build public support for ambitious climate policies and encourage consumers to make more sustainable choices in their lives, such as reducing waste, using public transportation, or supporting renewable energy. Education and public awareness also play an important role in shaping future generations to be more environmentally conscious, ensuring that efforts to achieve a sustainable future continue.

Strategies towards a sustainable future require a holistic approach that integrates the clean energy transition, sustainable management of natural resources, increasing community adaptation and resilience, as well as education and increasing public awareness. Through collaboration between governments, the private sector, civil society, and individuals, and a commitment to long-term investment and supportive policies, we can move towards a greener, fairer, and more sustainable future for all.

E. CONCLUSION

Through an in-depth analysis of the challenges presented by the climate crisis, as well as an evaluation of the various strategies and initiatives that have been implemented at global and national levels, several critical paths have been identified that must be taken to lead to a sustainable future. The key to this effort lies in implementing comprehensive policies that support the transition to clean energy, sustainable management of natural resources, increasing community adaptation and resilience to the impacts of climate change, as well as education and increasing public awareness of environmental issues. The synergy between climate policy and other development policies, as well as the important role of technology and innovation, also

points the way towards more effective handling of the climate crisis. It is important to recognize that the challenge of the climate crisis requires a response that is not only global but also inclusive, ensuring that all countries, sectors, and individuals are involved in the solution. Global collaborative initiatives and actions, including international cooperation, contributions from the private sector and civil society, capacity development, and adequate funding, are critical elements in realizing effective climate action. By moving together towards the same goal, namely a sustainable future for the planet and future generations, we can tackle the climate crisis with innovative, fair, and inclusive solutions.

REFERENCES

1. Adamo, N., Al-Ansari, N., & Sissakian, V. (2021). Review of climate change impacts on human environment: past, present and future projections. *Engineering*, *13*(11), 605-630.
2. Barbarossa, V., Bosmans, J., Wanders, N., King, H., Bierkens, M. F., Huijbregts, M. A., & Schipper, A. M. (2021). Threats of global warming to the world's freshwater fishes. *Nature communications*, *12*(1), 1701.
3. Bjelle, E. L., Wiebe, K. S., Többen, J., Tisserant, A., Ivanova, D., Vita, G., & Wood, R. (2021). Future changes in consumption: The income effect on greenhouse gas emissions. *Energy Economics*, *95*, 105114.
4. Borenstein, S., & Bushnell, J. B. (2022). Do two electricity pricing wrongs make a right? Cost recovery, externalities, and efficiency. *American Economic Journal: Economic Policy*, *14*(4), 80-110.
5. Caldwell, J. A., Williams, C. K., Brittingham, M. C., & Maier, T. J. (2022). A consideration of wildlife in the benefit-costs of hydraulic fracturing: expanding to an E3 analysis. *Sustainability*, *14*(8), 4811.
6. Castillo Esparcia, A., & López Gómez, S. (2021). Public opinion about climate change in United States, partisan view and media coverage of the 2019 United Nations Climate Change Conference (COP 25) in Madrid. *Sustainability*, *13*(7), 3926.
7. Dushkova, D., & Haase, D. (2020). Not simply green: Nature-based solutions as a concept and practical approach for sustainability studies and planning agendas in cities. *Land*, *9*(1), 19.
8. Gaillot, T., Beauchet, S., Lorne, D., & Krim, L. (2023). The impact of fossil jet fuel emissions at altitude on climate change: A life cycle assessment study of a long-haul flight at different time horizons. *Atmospheric Environment*, *311*, 119983.
9. Gulzar, A., Islam, T., Gulzar, R., & Hassan, T. (2021). Climate Change and Impacts of Extreme Events on Human Health: An Overview. *Indonesian Journal of Social and Environmental Issues (IJSEI)*, *2*(1), 68-77.
10. Iamtrakul, P., & Chayphong, S. (2023). Factors affecting the development of a healthy city in Suburban areas, Thailand. *Journal of Urban Management*.

11. Jones, M. W., Abatzoglou, J. T., Veraverbeke, S., Andela, N., Lasslop, G., Forkel, M., ... & Le Quéré, C. (2022). Global and regional trends and drivers of fire under climate change. *Reviews of Geophysics*, *60*(3), e2020RG000726.
12. Kabeyi, M. J. B., & Olanrewaju, O. A. (2022). Sustainable energy transition for renewable and low carbon grid electricity generation and supply. *Frontiers in Energy research*, *9*, 1032.
13. Laspidou, C. S., Mellios, N. K., Spyropoulou, A. E., Kofinas, D. T., & Papadopoulou, M. P. (2020). Systems thinking on the resource nexus: Modeling and visualisation tools to identify critical interlinkages for resilient and sustainable societies and institutions. *Science of the Total Environment*, *717*, 137264.
14. Malhi, G. S., Kaur, M., & Kaushik, P. (2021). Impact of climate change on agriculture and its mitigation strategies: A review. *Sustainability*, *13*(3), 1318.
15. Nelson, P. C. (2023). Effects of greenhouse gases on Earth, Venus, and Mars: Beyond the one-blanket model. *American Journal of Physics*, *91*(9), 721-730.
16. O'Sullivan, M., Gravatt, M., Popineau, J., O'Sullivan, J., Mannington, W., & McDowell, J. (2021). Carbon dioxide emissions from geothermal power plants. *Renewable Energy*, *175*, 990-1000.
17. Owen, G. (2020). What makes climate change adaptation effective? A systematic review of the literature. *Global Environmental Change*, *62*, 102071.
18. Pepin, N. C., Arnone, E., Gobiet, A., Haslinger, K., Kotlarski, S., Notarnicola, C., ... & Adler, C. (2022). Climate changes and their elevational patterns in the mountains of the world. *Reviews of Geophysics*, *60*(1), e2020RG000730.
19. Rangel-Buitrago, N. (2023). Human epoch-Human responsibility: Rethinking coastal zone management in the Anthropocene. *Ocean & Coastal Management*, *244*, 106801.
20. Santos, F. D., Ferreira, P. L., & Pedersen, J. S. T. (2022). The climate change challenge: A review of the barriers and solutions to deliver a Paris solution. *Climate*, *10*(5), 75.
21. Scoville-Simonds, M., Jamali, H., & Hufty, M. (2020). The hazards of mainstreaming: Climate change adaptation politics in three dimensions. *World Development*, *125*, 104683.
22. Shen, M., Huang, W., Chen, M., Song, B., Zeng, G., & Zhang, Y. (2020). (Micro) plastic crisis: un-ignorable contribution to global greenhouse gas emissions and climate change. *Journal of Cleaner Production*, *254*, 120138.
23. Tsindeliani, I. A., Proshunin, M. M., Sadovskaya, T. D., Popkova, Z. G., Davydova, M. A., & Babayan, O. A. (2022). Digital transformation of the banking system in the context of sustainable development. *Journal of Money Laundering Control*, *25*(1), 165-180.
24. Van Zanten, J. A., & van Tulder, R. (2021). Improving companies' impacts on sustainable development: A nexus approach to the SDGS. *Business Strategy and the Environment*, *30*(8), 3703-3720.

25. Yu, S., Sial, M. S., Tran, D. K., Badulescu, A., Thu, P. A., & Sehleanu, M. (2020). Adoption and implementation of sustainable development goals (SDGs) in China—Agenda 2030. *Sustainability*, *12*(15), 6288.