



CLIMATE CRISIS: NAVIGATING THE STORMY SEAS OF MITIGATION AND ADAPTATION SOLUTIONS

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Abstract

This paper aimed to examine the different mitigation and adaptation scenarios of climate change locally and internationally, with the objective of identifying effective strategies for reducing greenhouse gas emissions and adapting to the impacts of climate change. Climate change is a pressing global issue, with far-reaching impacts on the environment, human health, and the economy. Mitigation and adaptation are two key approaches to addressing climate change, with mitigation focusing on reducing greenhouse gas emissions and adaptation involving adjustments to the impacts of climate change. This paper employed a doctrinal research methodology, the paper examined various scenarios of climate change, including mitigation scenarios, involving the reduction of greenhouse gas emissions through renewable energy, energy efficiency, and carbon pricing and adaptation scenarios, embracing adaptation to the impacts of climate change through climate-resilient infrastructure, climate-smart agriculture, and early warning systems. The paper revealed that effective climate change mitigation and adaptation require a multi-faceted approach, involving global cooperation and consistent national policies are essential for effective climate change mitigation and adaptation, investing in climate-resilient infrastructure can help communities adapt to the impacts of climate change. The paper concluded that climate change mitigation and adaptation require a comprehensive approach, involving both international cooperation and local action.

Keywords: *Climate Change, Adaptation and Mitigation*

1. Introduction

Climate change is one of the most pressing issues of our time, with far-reaching consequences for the environment, human health, and the global economy. As the world grapples with the challenges of reducing greenhouse gas emissions and adapting to the impacts of climate change, it is essential to examine the legal and historical context of climate change mitigation and adaptation.¹

From a historical perspective, climate change is not a new phenomenon, but the current rate of change is unprecedented. Human activities, such as burning fossil fuels and deforestation, have significantly contributed to the increase in greenhouse gas emissions, leading to global warming.² The scientific community has been warning about the dangers of climate change for decades, and international efforts to address the issue have been ongoing. The United Nations Framework Convention on Climate Change was adopted in 1992, and the Paris Agreement was signed in 2015, setting a global goal to limit warming to well below 2°C and pursue efforts to limit it to 1.5°C above pre-industrial levels.³ The legal framework for climate change mitigation and adaptation is complex and multifaceted. International law,

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¹ P Obani and E Ekhatior, 'Transnational Litigation and Climate Change in Nigeria' <<https://www.afronomicslaw.org/category/analysis/transnational-litigation-and-climate-change-nigeria>> accessed 22 September 2024.

² I A Adedoyin and others, 'Impact of Climate Change in Nigeria' [2011](2)(2) *Iranian Journal of Energy and Environment*; 145-152.

³ *Ibid.*

including the UNFCCC and the Paris Agreement, provides a foundation for global cooperation on climate change. National laws and policies also play a crucial role in implementing climate change mitigation and adaptation measures. Local governments and communities are also essential in developing and implementing climate change strategies that are tailored to their specific needs and circumstances.⁴

Mitigation and adaptation are two key strategies for addressing climate change. Mitigation involves reducing greenhouse gas emissions to slow the rate of global warming, while adaptation involves taking steps to prepare for and respond to the impacts of climate change. Both strategies require a coordinated effort from governments, businesses, and civil society. Local perspectives are essential in developing effective climate change mitigation and adaptation strategies, as they take into account the specific needs and circumstances of communities.

2. Understanding the Dual Approach to Climate Action

The dual approach to climate action involves two complementary strategies: mitigation and adaptation. Mitigation focuses on reducing greenhouse gas emissions to slow the rate of global warming, while adaptation involves taking steps to prepare for and respond to the impacts of climate change.⁵ Understanding the dual approach is essential for developing effective climate action plans that address both the causes and consequences of climate change.

Mitigation is a critical component of the dual approach, as it aims to reduce the amount of greenhouse gases in the atmosphere, thereby slowing the rate of global warming. Mitigation strategies include transitioning to renewable energy sources, improving energy efficiency, and electrifying transportation. Mitigation efforts can be implemented at various levels, from individual actions to national policies and international agreements. Adaptation, on the other hand, focuses on preparing for and responding to the impacts of climate change. Adaptation strategies include building sea walls to protect against rising sea levels, implementing early warning systems for extreme weather events, and developing climate-resilient agriculture. Adaptation efforts are essential for reducing the vulnerability of communities and ecosystems to climate change.

The dual approach recognizes that mitigation and adaptation are interconnected and complementary strategies. Mitigation efforts can reduce the severity of climate change impacts, while adaptation efforts can help communities and ecosystems cope with the impacts that are already being felt.⁶ By combining mitigation and adaptation strategies, we can develop more effective climate action plans that address both the causes and consequences of climate change. One of the key benefits of the dual approach is that it allows for a more comprehensive understanding of climate change risks and opportunities.⁷ The dual approach also recognizes the importance of context-specific solutions. Mitigation and adaptation strategies that are effective in one location may not be suitable for another location with different climate, economic, and social conditions.⁸

⁴ *Ibid.*

⁵ U Etemire, 'The Future of Climate Change Litigation in Nigeria: COPW v NNPC in the Spotlight' [2021] (2) *CCLR*; 158-170.

⁶ *Ibid.*

⁷ *Ibid.*

⁸ *Ibid.*

3. International Mitigation and Adaptation Scenarios and Frameworks

The international community has developed various scenarios and frameworks to address the challenges of climate change. One of the most notable frameworks is the United Nations Framework Convention on Climate Change, which was adopted in 1992. The UNFCCC sets out the principles and objectives for international cooperation on climate change, including the stabilization of greenhouse gas concentrations in the atmosphere.⁹ The Paris Agreement, adopted in 2015, is another critical framework for international climate action. The Agreement sets a global goal to limit warming to well below 2°C and pursue efforts to limit it to 1.5°C above pre-industrial levels. Countries are required to submit Nationally Determined Contributions⁴ outlining their mitigation and adaptation plans.¹⁰

International mitigation scenarios often focus on reducing greenhouse gas emissions through the transition to renewable energy sources, energy efficiency, and electrification of transportation. The International Energy Agency (IEA) has developed various scenarios, including the Sustainable Development Scenario, which outlines a pathway to limit warming to well below 2°C.

Adaptation scenarios, on the other hand, focus on preparing for and responding to the impacts of climate change. The Intergovernmental Panel on Climate Change has developed various scenarios, including the Representative Concentration Pathways, which outline different possible future climate scenarios. One of the challenges of international mitigation and adaptation efforts is the need for global cooperation.¹¹ Climate change is a global problem that requires collective action from countries around the world. However, countries have different priorities, capacities, and levels of development, which can make it challenging to reach agreement on climate action. Another challenge is the issue of equity and justice. Climate change disproportionately affects vulnerable populations, including low-income communities, indigenous peoples, and small-island developing states.¹²

The lack of climate finance is another significant challenge. Many countries, particularly developing countries, lack the financial resources to implement mitigation and adaptation measures. The international community has committed to mobilizing \$100 billion per year in climate finance, but this goal has not yet been met. In addition to finance, technology transfer and capacity building are also essential for supporting climate action in developing countries. The international community has established various mechanisms, including the Climate and Clean Air Coalition and the Green Climate Fund, to support technology transfer and capacity building. Despite these challenges, there are many opportunities for international cooperation on climate change. The Paris Agreement has sparked a wave of climate action, with many countries committing to ambitious mitigation and adaptation targets. The development of new technologies, including renewable energy and carbon capture and storage, also offers opportunities for reducing greenhouse gas emissions.

4. Conference of Parties

The history of COP meetings reflects the ongoing global effort to address climate change. From the early days of the UNFCCC to the present, the COP process has made significant progress, but much

⁹ U Etemire, 'The Future of Climate Change Litigation in Nigeria: COPW v NNPC in the Spotlight' [2021](2) *CCLR*; 158-170.

¹⁰ *Ibid.*

¹¹ J B J Preston, 'Climate Change Litigation' (A Ppaer presented to Judicial Conference of Australia Colloquium 2008).

¹² *Ibid.*

work remains to be done to achieve a sustainable, low-carbon future. The Conference of the Parties is the supreme decision-making body of the United Nations Framework Convention on Climate Change.¹³ The journey to COP began in 1992 when countries joined an international treaty, the UNFCCC, to combat climate change by limiting global temperature increases and coping with its impacts.

The Formation of COP

The first COP meeting was held in Berlin, Germany, in March 1995, where countries reviewed national communications and emission inventories. This marked the beginning of annual gatherings to assess progress and make decisions to promote effective implementation of the Convention. The COP meets every year, unless the Parties decide otherwise.

Early Years (1995-2000)

COP 1 (1995): Berlin, Germany: Focused on reviewing national communications and emission inventories, establishing a pilot phase for Joint Implementation projects.

COP 2 (1996): Geneva, Switzerland: Accepted scientific findings on climate change, calling for legally binding mid-term targets.

COP 3 (1997): Kyoto, Japan: Adopted the Kyoto Protocol, outlining greenhouse gas emissions reduction obligations for developed countries.

COP 4 (1998): Buenos Aires, Argentina: Adopted the Buenos Aires Plan of Action to advance efforts and devise mechanisms for implementing the Kyoto Protocol.

COP 6 (2000): The Hague, Netherlands: Talks collapsed due to disagreements over carbon sinks, compliance, and financing.

COP 6-2 (2001): Bonn, Germany: Reached agreements on flexibility mechanisms, carbon sinks, compliance, and financing.

COP 7 (2001) Marrakech, Morocco: Finalized operational details of the Kyoto Protocol, establishing the Marrakech Accords.

COP 15 (2009): Copenhagen, Denmark: Failed to reach a binding agreement, but the Copenhagen Accord recognized the need to limit global warming to 2°C.

COP 16 (2010): Cancun, Mexico: Adopted the Cancun Agreements, establishing a framework for reducing greenhouse gas emissions and supporting developing countries.

Recent Developments (2015-Present)

COP 21 (2015): Paris, France: Adopted the Paris Agreement, setting a global goal to limit warming to well below 2°C and pursue efforts to limit it to 1.5°C.

¹³ J. Smith and D. Shearman 'Climate Change Litigation: Analysing the Law, Scientific Evidence and Impacts on the Environment, Health and Property' (2006) 17.



COP 26 (2021): Glasgow, UK: Focused on implementing the Paris Agreement, emphasizing reducing emissions and transitioning to renewable energy.

COP 27 (2022): Sharm El-Sheikh, Egypt: Highlighted climate finance and adaptation, establishing a loss and damage fund.

COP 28 (2023): Dubai, UAE: Focused on transitioning away from fossil fuels, increasing renewable energy capacity, and reducing emissions.

COP29 (2024) Baku, Azerbaijan, focuses on a new collective quantified goal on climate finance (NCQG). Despite progress, COP meetings have faced challenges, such as disagreements over carbon sinks, compliance, and financing, which led to the collapse of talks at COP 6. Additionally, some countries have struggled to meet their emissions reduction targets, highlighting the need for continued cooperation and ambition. The COP process continues to evolve, with each meeting building on previous agreements and outcomes. The focus remains on implementing the Paris Agreement, reducing emissions, and supporting developing countries in their efforts to mitigate and adapt to climate change.¹⁴

5. Drivers of Climate Change Litigation

Climate change litigation is primarily driven by the causes and effects of climate change. The primary causes of climate change can be attributed to both natural and human activities. Natural factors include variability in solar radiation, volcanic eruptions and changes in oceanic and atmospheric patterns.¹⁵ However, human activities have played a significant role in exacerbating climate change in Nigeria. The largest contributor to GHG emissions is the burning of fossil fuels for electricity generation, industrial processes and transportation. Deforestation and land-use changes, especially for agricultural expansion and logging, have also contributed to increased carbon dioxide levels and loss of carbon sinks.

One of the key consequences of climate change is the alteration of rainfall patterns, leading to both prolonged drought and intense flooding.¹⁶ This has devastating effects on agriculture, as changing rainfall patterns disrupt crop growth and irrigation, which often results in food insecurity and reduced agricultural productivity. Rising temperatures also exacerbate heatwaves, putting vulnerable populations at risk, especially in urban areas with inadequate access to cooling or energy resources.¹⁷ Coastal erosion and sea-level rise also pose threats to coastal communities, industrial infrastructure, and ecosystems, driving displacement and loss of livelihoods. These impacts are particularly felt by local communities and individuals who depend directly on natural resources for their survival. It is these concerns that drive global regulations to combat climate change and the emission of GHGs.

¹⁴ J. Smith and D. Shearman 'Climate Change Litigation: Analysing the Law, Scientific Evidence and Impacts on the Environment, Health and Property' (2006) 17.

¹⁵ C Ezegwu, 'Climate Change in Nigeria: The Impacts and Adaptation Strategies' <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2543940> accessed 13 October 2023.

¹⁶ I A Adedoyin and others, 'Impact of Climate Change in Nigeria' [2011] (2)(2) *Iranian Journal of Energy and Environment*;145-152.

¹⁷ *Ibid.*

6. Nigeria's Climate Obligations at the International Level

Countries around the world are under obligation to take urgent action to combat climate change and its impacts.¹⁸ Nigeria's climate obligations under international law have evolved over time, especially since its membership in the United Nations (UN). Nigeria is a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) 1992 wherein it is obligated to take measures to mitigate climate change and ensure sustainable development. Nigeria is also a signatory to the Kyoto Protocol and also the Paris Agreement 2015 which aims to limit global warming well below 2° C and pursue efforts to keep it within 1.5 ° C

In pursuance of these international treaties, Nigeria has adopted its Nationally Determined Contributions (NDCs) as part of its obligations under the Paris Agreement. Nigeria's NDCs include targets for reducing emissions, increasing renewable energy use and enhancing sustainable land management practices.¹⁹ Nigeria committed to reducing emissions unconditionally by 20% by 2030 and potentially increasing the reduction to 45% with international support.²⁰ The adoption of the NDCs around the world and their legislative backings at the domestic level have triggered a new wave of approach towards protecting the climate system and the ozone layer.

Thus, foreign and international climate change litigations have gained momentum as a means for stakeholders to hold countries and multinational corporations accountable for climate change impacts. In the case of *Leghari v. Federation of Pakistan*,²¹ the court held that the failure of the Pakistani government to address climate change issues violated the petitioners' rights. Also, the case of *Urgenda Foundation v State of Netherlands*²² sets a precedent in the Netherlands as the Dutch Supreme Court ordered the government to reduce GHG emissions by 25% below 1990 levels by 2020, surpassing the prior commitment of 17%. This decision in *Urgenda* relied on human rights-based approach presented by *Urgenda*.

Another significant development in foreign climate change litigation occurred in May 2021 when the District Court of The Hague ordered Shell in *Milieudefensie & Ors v. Shell*²³ to cut the CO₂ emissions of the entire Shell group by 45% below 2019 levels by 2030. The judgment emphasized the relevance of a human rights approach in climate change cases. It also considered the view that human rights provide protection against the impacts of hazardous climate change and that companies must respect human rights.²⁴ The court explicitly referenced the case of *Urgenda* and other human rights instruments and guidelines.

7.0 Legislative Framework on Climate Change Litigation in Nigeria

To meet its global climatic obligations, Nigeria has adopted various domestic legal measures one of which is the Climate Change Act 2021 (CCA). The CCA provides for the mainstreaming of climate change actions in Nigeria and establishes the National Council on Climate Change (NCCC). The CCA

¹⁸ Sustainable Development Goals (SDGs), goal 13.

¹⁹ Federal Ministry of Environment, 'National Climate Change Policy 2021-2023, preamble.

²⁰ *Ibid.*, para.2.2.

²¹ W.P. No. 25501/2015

²² [2015] HAZA C/09/00456689

²³ ECLI:NL:RBDHA:2021:5337

²⁴ *Ibid.*



to achieve low GHG emissions, inclusive green growth, and sustainable economic development.²⁵ It seeks to formulate programmes that align with long-term climate change mitigation and adaptation goals while integrating climate change actions into national development priorities.²⁶ The CCA also prioritizes the mobilization of finance and resources for effective climate change actions, as well as the integration of climate change policies with other related policies for socio-economic development and environmental integrity.²⁷

In line with Nigeria's NDCs, the CCA sets a target for attaining net-zero GHG emissions by 2050-2070. It highlights the need to identify risks, build resilience and strengthen adaptive capacities to address the impacts of climate change.²⁸ By virtue of section 27 of the CCA, the NCCC is responsible for endorsing and implementing nature-based solutions as an approach to addressing climate change challenges in Nigeria,

Section 34 of the CCA focuses on climate change litigation comprising both civil and criminal actions. Section 34(1) of the CCA establishes offences and penalties for individuals or entities that act in a manner that hinders or undermines the efforts towards climate change mitigation and adaptation measures.²⁹ This provision allows for the imposition of penalties to deter activities that hinder or obstruct climate change solutions. Section 34(2) of the CCA specifically illustrates the applicability and recognition of climate change litigation in Nigeria. It grants power to the court before which a suit on climate change is instituted to issue orders to prevent, stop or discontinue acts that harm the environment. This provision provides a legal pathway for individuals, organizations or communities to bring grievances related to climate change and seek remedies for environmental damage.

Under the CCA, public officials can be compelled through an order of the court to act in response to harmful actions affecting the environment.³⁰ This adds an essential dimension to climate change litigation in Nigeria as it enables the court to hold public officials accountable and requires them to take necessary actions to prevent or stop activities detrimental to the climate system. This recognition reflects the importance of governmental responsibility and cooperation in addressing climate change issues.

8.0 Climate Change Litigation Cases in Nigeria

Nigeria mirrors the international climate change litigation system where victims, local communities and CSOs approach foreign courts to seek redress against the activities of international oil companies (IOCs) in the Niger Delta region. In a number of cases, the CSOs in Nigeria have strategically employed climate change litigation as a means to influence the government and IOCs in the oil and gas sector. The high rate of cases filed abroad, especially in the home country of the IOCs, affirms the growing reliance on international and foreign litigation to hold the IOCs liable for polluting Nigeria's climate system. These cases are usually filed in foreign jurisdictions such as the Netherlands, USA and UK with the help of international NGOs.

²⁵ Climate Change Act 2021, s 1.

²⁶ *Ibid.*

²⁷ *Ibid.*

²⁸ *Ibid.*

²⁹ CCA, s 34(1).

³⁰ *Ibid.*, s 34(2)(b).



In the case of *Akpan v Shell*,³¹ a suit was filed in the Netherlands by CSOs and Niger Delta fishermen affected by oil pollution caused by Shell in three villages in the Niger Delta region. The Dutch court held Shell liable for compensation for the oil spills that resulted from an abandoned wellhead. However, the court dismissed claims regarding a general duty of care. In upholding environmental protection, the court categorically stated that the claim was not only crucial for the victims affected by the spill but also for the wider community and the environment.

Obani and Ekhatior have argued that seeking damages or compensation in foreign courts for environmental violations caused by IOCs does not effectively promote the attainment of goal 13 of the SDGs in Nigeria.³² They further maintained that while foreign and international climate change litigations have contributed to climate change policy development and the protection of victims, relying solely on litigation in foreign courts cannot adequately promote climate change mitigation and adaptation. This is not only due to the difficulty in enforcing foreign judgments in Nigeria but also the expenses incurred in initiating matters in foreign courts. Having said this, we will now focus on the nature of climate change litigation in Nigeria.

Generally, climate change litigation is not yet as grounded and popular in Nigeria as it is in some developed countries. However, there are some decisions that establish principles that impact this species of action in the country. The case of *Gbemre v Shell*³³ is often identified as the first case in Nigeria that is related to climate change. In this case, the Federal High Court took a constitutional human rights approach to address the issue of gas flaring. The court recognised the negative impacts of gas flaring on the health and wellbeing of the people of Iwherokan community in Delta State and therefore ordered the respondent to stop the flaring as it violates the right to a clean and healthy environment.

9. Limitations of Climate Change Litigation in Nigeria

Despite the potential for climate change litigation to address environmental issues in Nigeria, there are certain limitations associated with proving causation in such cases. One of the primary challenges is attributing specific harm to individual emissions.³⁴ Climate change is a complex global phenomenon, and establishing a direct causal link between specific actions or emissions and the resulting harm can be a daunting task. It requires comprehensive scientific analysis and evidence that establishes a clear connection between the actions or omissions of the defendant and the specific harm suffered by the plaintiff. This burden of proof can be particularly challenging in cases where multiple sources contribute to climate change, which makes it difficult to pinpoint and establish individual or corporate responsibility. Also, the long-term nature of climate change and its cumulative impacts can make it challenging to establish a direct cause-effect relationship between specific emissions and the harm suffered. These limitations highlight the need for interdisciplinary collaboration between scientists, legal experts and policy-makers to address the evidentiary challenges associated with climate change litigation in Nigeria.

³¹ <<https://elaw.org/af-akpan-v-royal-dutch-shell-plc-0>> accessed 28 September 2023.

³² Obani and Ekhatior (n 1).

³³ (2005) AHRLR 151.

³⁴ J. Smith and D. Shearman 'Climate Change Litigation: Analysing the Law, Scientific Evidence and Impacts on the Environment, Health and Property' (2006) p.17.



Another important aspect of climate change litigation in Nigeria is the role of local communities in seeking justice for the impacts they experience. Indigenous peoples often bear the brunt of climate change as their livelihoods and cultural practices are closely tied to the environment. However, there is a lack of awareness and knowledge of climate change litigation and environmental rights among the general population. Many individuals are unaware of their legal rights and the legal avenues available to address climate change-related issues. This lack of awareness poses a significant barrier to accessing the judiciary and seeking justice for climate change impacts.

Also, there is often a lack of trust in the judiciary due to corruption, political interference and a perception of bias. This lack of trust can discourage individuals and communities from pursuing climate change litigation in Nigeria and resort to foreign courts. Nigeria heavily relies on oil revenue, and as a result, the interests of the IOCs may be prioritised over the environmental concerns raised in litigation. Finally, lengthy court processes, adjournments and the backlog of cases can discourage litigants from exploring the courts in Nigeria.

10. Local Mitigation Strategies in Nigeria

Nigeria, like many other countries, is vulnerable to the impacts of climate change. To mitigate these impacts, local strategies are being implemented to reduce greenhouse gas emissions and promote sustainable development. One such strategy is the promotion of renewable energy sources, such as solar and wind power, to reduce dependence on fossil fuels. Additionally, efforts are being made to increase energy efficiency in buildings and industries, and to promote sustainable land use practices, such as reforestation and agroforestry.

Adaptation Strategies in Nigeria

Nigeria is also implementing adaptation strategies to cope with the impacts of climate change. One such strategy is the development of climate-resilient agriculture, which involves promoting drought-tolerant crops and climate-smart agricultural practices. Another strategy is the improvement of water management systems, including the development of water harvesting and storage infrastructure, to reduce the impacts of droughts and floods. Furthermore, efforts are being made to enhance the resilience of communities to climate-related disasters, such as floods and heatwaves, through early warning systems and emergency preparedness plans.

Challenges in Downscaling Global Scenarios

Downscaling global climate scenarios to local or regional scales is a crucial step in understanding and preparing for climate change impacts. However, this process is fraught with challenges.³⁵ One of the primary challenges is the mismatch between the coarse spatial resolution of global climate models and the finer scales required for local decision-making. Global models often have grid cells that are hundreds of kilometres wide, which can lead to a loss of detail and accuracy when applied to local areas.

Sector-Specific Scenarios for Climate Change

Sector-specific scenarios are an essential tool for understanding the potential impacts of climate change on different sectors, such as agriculture, water resources, and infrastructure. These scenarios can help

³⁵ J B J Preston, 'Climate Change Litigation' (A Paper presented to Judicial Conference of Australia Colloquium 2008).

decision-makers and stakeholders develop more effective adaptation and mitigation strategies by providing a detailed understanding of the potential consequences of climate change on specific sectors.

Agriculture Sector Scenarios

In the agriculture sector, climate change scenarios can help farmers and policymakers understand the potential impacts of changing temperature and precipitation patterns on crop yields, soil health, and pest management. For example, scenarios may indicate that certain crops will become more or less viable in specific regions, or that changing weather patterns will require adjustments to irrigation systems or pest management strategies. By understanding these potential impacts, farmers and policymakers can develop more effective adaptation strategies, such as breeding more resilient crop varieties or implementing conservation agriculture practices.³⁶

Water Resources Sector Scenarios

In the water resources sector, climate change scenarios can help water managers and policymakers understand the potential impacts of changing precipitation patterns and increased evaporation on water availability and quality. For example, scenarios may indicate that certain regions will experience more frequent or severe droughts or floods, or that changing water temperatures will impact aquatic ecosystems. By understanding these potential impacts, water managers and policymakers can develop more effective adaptation strategies, such as implementing water conservation measures or designing more resilient water infrastructure.³⁷

11. Conclusion

Mitigation and adaptation scenarios are essential tools for addressing climate change at the local and international levels. By developing and implementing effective mitigation scenarios, we can reduce greenhouse gas emissions and slow the rate of global warming. Adaptation scenarios, on the other hand, can help communities and ecosystems prepare for and respond to the impacts of climate change.

12. Recommendations

To effectively address climate change, we recommend that local and international stakeholders prioritize the development and implementation of integrated mitigation and adaptation scenarios. This can involve transitioning to renewable energy sources, improving energy efficiency, promoting sustainable land use practices, and building climate-resilient infrastructure. Additionally, we recommend that stakeholders prioritize equity, justice, and human rights in climate change decision-making, and ensure that climate change strategies are inclusive and participatory.

³⁶ J. Smith and D. Shearman 'Climate Change Litigation: Analysing the Law, Scientific Evidence and Impacts on the Environment, Health and Property' (2006) 17.

³⁷ *Ibid.*