

THE ROLE OF FINANCIAL MECHANISMS IN FACILITATING CLIMATE CHANGE IN PAKISTAN: CHALLENGES AND OPPORTUNITIES

1. **Niamat Khan**
naimatkhan@gmail.com

M.Phil Scholar, Pakistan studies department, Abbottabad University of Science & Technology, KP.

2. **Sadaf Butt**
sadafbutt@aust.edu.pk

Lecturer, Pakistan studies department, Abbottabad University of Science & Technology, KP.

Vol. 02, Issue, 04, Oct-Dec 2024, PP:78-93

OPEN ACCES at: www.irjicc.com

Article History	Received	Accepted	Published
	18-10-24	03-11-24	30-12-24

Abstract

The increasing frequency of extreme weather events, water scarcity, and agricultural disruptions caused by climate change in Pakistan highlight the critical need for efficient financing structures to fund mitigation and adaptation activities. This study looks at how financial systems help Pakistan respond to climate change, identifying both opportunities and concerns. Inadequate institutional capacity, a growing population reliant on climate-sensitive industries like agriculture, and limited financial resources all contribute to Pakistan's susceptibility to climate change. The nation's climate resilience is greatly influenced by current financial systems, such as private sector investments, domestic budgetary allotments, and international climate funds like the Green Climate Fund. However, there are a number of obstacles that these mechanisms must overcome, including a lack of coordination between government agencies and stakeholders, complicated access procedures, and inadequate funding. The analysis pinpoints important chances to improve Pakistan's financial systems. These include enhancing public-private partnerships for climate infrastructure projects, creating novel financial instruments like green bonds and climate insurance, and more efficiently utilizing international climate finance. Enhancing the effectiveness of climate investments and streamlining resource allocation are further benefits of strengthening institutional frameworks and policy coherence. Building local project

THE ROLE OF FINANCIAL MECHANISMS IN FACILITATING CLIMATE CHANGE IN PAKISTAN: CHALLENGES AND OPPORTUNITIES

development capability, including climate issues into national budgeting processes, and increasing accountability and openness in the use of climate funds are some of the recommendations. Pakistan can improve its finance systems for climate action and promote resilience and sustainable development in the face of growing climate dangers by tackling these issues and grasping possibilities. By providing policymakers and stakeholders with insights to maximize resource allocation and promote effective climate interventions, this study adds to the conversation on climate finance in poor nations.

Keywords: *water scarcity, climate change, policymakers, finance systems, transition, policy coherence.*

INTRODUCTION

Climate change finance is a key component of Pakistan's efforts to address the challenges posed by climate change. The country is highly vulnerable to the impacts of climate change, including rising temperatures, changing rainfall patterns, and an increasing frequency of extreme weather events. To address these challenges, Pakistan requires significant financial resources to support climate change mitigation and adaptation efforts. The Pakistani government has recognized the importance of climate change finance and has taken steps to mobilize financial resources to support climate change efforts. In 2012, the government established the Climate Change Division, which is responsible for coordinating national efforts to address climate change. The Division has developed a number of policies and programs to support climate change finance, including the National Climate Change Policy and the Climate Change Finance Framework.¹

One of the key challenges facing climate change finance in Pakistan is the lack of funding and resources. The country's climate change budget is limited, and the government relies heavily on international funding and assistance to finance climate change projects and programs. In 2019, the government allocated PKR 12.5 billion (approximately US\$80 million) for climate change initiatives, a significant increase over previous years. However, this amount is still insufficient to address the scale and complexity of the climate change challenges facing the country. To bridge the funding gap, the Pakistani government has established a number of financial mechanisms to mobilize resources for climate change financing.² These include the Green Climate Fund (GCF), an international fund that provides financing for climate change projects and programs in developing countries. Pakistan has accessed GCF funding for several climate change projects, including the "Pakistan Climate Change Project," which aims to increase the country's climate resilience and reduce greenhouse gas emissions.

Another financial mechanism established by the Pakistani government is the Climate Change Fund. In a domestic fund that provides financing for climate change projects and programs. The CCF is managed by the Climate Change Division and provides financing for a range of climate change initiatives, including renewable energy development, energy efficiency improvements, and climate

resilient infrastructure development. In addition to these financial mechanisms, the Pakistani government has also established several partnerships with international organizations and donors to finance climate change. These include partnerships with the United Nations Development Program the World Bank, and the Asian Development Bank. These partnerships provide significant financing and technical assistance for climate change projects and programs in Pakistan. Despite these efforts, climate change financing in Pakistan still faces several challenges and limitations. One of the key challenges is the lack of coordination and cooperation between different government agencies and departments, which can result in duplication of efforts and inefficient use of resources. Another challenge is the lack of capacity and expertise among government officials and other stakeholders, which can limit the effectiveness of climate change finance measures. To address these challenges and limitations, the Pakistani government needs to take several steps. First, the government needs to strengthen coordination and cooperation between different government agencies and departments to ensure that climate change finance measures are effective and efficient. Second, the government needs to enhance the capacity and expertise of government officials and other stakeholders to ensure that they have the necessary skills and knowledge to effectively implement climate change finance measures.³

Climate change finance is a key component of Pakistan's efforts to address the challenges posed by climate change. The country has established several financial mechanisms and partnerships to finance climate change, including the Green Climate Fund, the Climate Change Fund, and partnerships with international organizations and donors. However, despite these efforts, climate change financing in Pakistan still faces several challenges and limitations, including a lack of coordination and cooperation between different government agencies and departments, and a lack of capacity and expertise among government officials and other stakeholders. To address these challenges and limitations, the Pakistani government needs to take several steps, including strengthening coordination and cooperation between different government agencies and departments, and enhancing the capacity and expertise of government officials and other stakeholders.⁴

NATIONAL CLIMATE CHANGE FUNDING MECHANISMS

Pakistan is one of the country's most vulnerable to the impacts of climate change. The country is facing rising temperatures, changing rainfall patterns, and an increasing frequency of extreme weather events. To address these challenges, the Pakistani government has established several national climate change funding mechanisms to support climate change mitigation and adaptation efforts. The Climate Change Fund is one of the key national mechanisms in Pakistan. The CCF was established in 2013 with the aim of providing financial support to climate change projects and programs in Pakistan. The fund is managed by the Ministry of Climate Change and is financed through a combination of government allocations and international funding.⁵

The CCF provides financing for a range of climate change initiatives, including renewable energy development, energy efficiency improvements, climate-resilient

THE ROLE OF FINANCIAL MECHANISMS IN FACILITATING CLIMATE CHANGE IN PAKISTAN: CHALLENGES AND OPPORTUNITIES

infrastructure development, and climate change adaptation and resilience building in vulnerable communities. The fund also provides funding for climate change research and development, as well as climate change education and awareness-raising initiatives. Another important national climate change funding mechanism in Pakistan is the Green Climate Fund. The GCF is an international fund that provides financing for climate change projects and programs in developing countries. Pakistan has accessed GCF funding for several climate change projects, including the "Pakistan Climate Change Project", which aims to increase the country's climate resilience and reduce greenhouse gas emissions. In addition to the CCF and GCF, Pakistan has also established several other national climate change funding mechanisms. These include the Climate Change Adaptation Fund, which provides financing for climate change adaptation and resilience-building measures in vulnerable communities. The Climate Change Mitigation Fund, which provides financing for climate change mitigation measures, such as renewable energy development and energy efficiency improvements; and the Climate Change Research and Development Fund, which provides financing for climate change research and development initiatives.

The Pakistani government has also established a number of policies and programs for climate change finance. These include the National Climate Change Policy, which provides a framework for climate change policy and action in Pakistan. The Climate Change Financing Framework, which provides a framework for climate change financing in Pakistan. and the Green Pakistan Program, which aims to promote sustainable development and reduce greenhouse gas emissions in Pakistan.⁶ Despite these efforts, Pakistan's national climate change finance system still faces several challenges and limitations. One of the main challenges is the lack of funding and resources. For example, the CCF has limited funding and resources, which may limit its ability to support climate change projects and programs. Another challenge is the lack of capacity and expertise among government officials and other stakeholders, which may limit the effectiveness of climate change finance initiatives. To address these challenges and limitations, the Pakistani government needs to take a number of steps. First, the government needs to increase funding and resources for the CCF and other national climate change financing mechanisms. This can be achieved through a combination of government allocations and international funding. Second, the government needs to build the capacity and expertise of government officials and other stakeholders to ensure that they have the necessary skills and knowledge to effectively implement climate change finance measures.⁷

Pakistan's national climate change financing mechanisms play a critical role in supporting climate change mitigation and adaptation efforts in the country. The CCF, GCF, and other national climate change financing mechanisms provide financing for a range of climate change measures, including renewable energy development, energy efficiency improvements, and climate change adaptation and resilience building in vulnerable communities. However, despite these efforts,

Pakistan's national climate change financing mechanism still faces a number of challenges and limitations, including a lack of funding and resources, and a lack of capacity and expertise among government officials and other stakeholders.⁸ To address these challenges and limitations, the Pakistani government needs to take several steps, including increasing funding and resources for the CCF and other national climate change funding mechanisms, and building the capacity and expertise of government officials and other stakeholders.

INTERNATIONAL CLIMATE CHANGE FUNDING MECHANISMS

International climate change financing mechanisms play a crucial role in helping developing countries, including Pakistan, address the challenges posed by climate change. These mechanisms provide financial support to developing countries to reduce their greenhouse gas emissions and adapt to the impacts of climate change. This article will review the major international climate change financing mechanisms, highlighting their objectives, eligibility criteria, and benefits.

One of the major international climate change financing mechanisms is the Green Climate Fund (GCF). The GCF is an international fund that provides financing for climate change projects and programs in developing countries. The fund was established in 2010 and is headquartered in South Korea. The GCF provides financing for a range of climate change initiatives, including renewable energy development, energy efficiency improvements, and climate change adaptation and resilience building in vulnerable communities.⁹

Another important international climate change funding mechanism is the Global Environment Facility. The GEF is a partnership of 18 agencies, including the United Nations Development Program the United Nations Environment Program and the World Bank. The GEF provides financing for climate change projects and programs in developing countries, focusing on reducing greenhouse gas emissions and promoting sustainable development.¹⁰ Climate Investment Funds (CIFs) are another key international climate change funding mechanism. The CIFs are a pair of funds that provide financing for climate change projects and programs in developing countries. The CIFs were established in 2008 and are managed by the World Bank. The CIFs provide financing for a range of climate change initiatives, including the development of renewable energy, improving energy efficiency, and building climate change adaptation and resilience in vulnerable communities.¹¹

The Adaptation Fund is another important international climate change funding mechanism. The AF is a fund that provides financing for climate change adaptation projects and programs in developing countries. The AF was established in 2001 and is headquartered in Washington, DC. The AF provides financing for a range of climate change adaptation measures, including the development of climate-resilient infrastructure, the development of climate-resilient agriculture, and the development of climate change early warning systems. The Least Developed Countries Fund (LDCF) is another important international climate change funding mechanism. The LDCF is a fund that provides financing for climate change adaptation projects and programs in least developed countries (LDCs). The LDCF was established in 2001 and is headquartered in Geneva, Switzerland. The LDCF

THE ROLE OF FINANCIAL MECHANISMS IN FACILITATING CLIMATE CHANGE IN PAKISTAN: CHALLENGES AND OPPORTUNITIES

provides financing for a range of climate change adaptation initiatives, including the development of climate-resilient infrastructure, the development of climate-resilient agriculture, and the development of climate change early warning systems.¹²

In addition to these international climate change funding mechanisms, there are also a number of bilateral and multilateral funding mechanisms that provide financing for climate change projects and programs in developing countries. These include the United States Agency for International Development. Climate Change Initiative, the European Union Climate Change Program, and the Australian Government's Climate Change Program. The international climate change financing mechanism plays a critical role in helping developing countries, including Pakistan, address the challenges posed by climate change. These mechanisms provide financial support to developing countries to reduce their greenhouse gas emissions and adapt to the impacts of climate change. The GCF, GEF, CIFs, AF, and LDCF are some of the major international climate change funding mechanisms that provide financing for climate change projects and programs in developing countries.¹³

GREEN CLIMATE FUND AND PAKISTAN

The Green Climate Fund (GCF) is an international fund that provides financing for climate change projects and programs in developing countries, including Pakistan. The GCF was established in 2010 by the United Nations Framework Convention on Climate Change to support developing countries in their efforts to reduce greenhouse gas emissions and adapt to the impacts of climate change. Pakistan is one of the countries most affected by the impacts of climate change, and the GCF is playing a key role in supporting the country's climate change efforts. In 2015, Pakistan became one of the first countries to access GCF funding, with the approval of a US\$36 million project for renewable energy development in the country. Since then, Pakistan has accessed GCF funding for a number of climate change projects and programs, including the "Pakistan Climate Change Project," which aims to increase the country's climate resilience and reduce greenhouse gas emissions. The project, which is being implemented by the Ministry of Climate Change, aims to promote the use of renewable energy, improve energy efficiency, and enhance climate-resilient infrastructure in the country.¹⁴

In addition to these projects, the GCF has also provided funding to Pakistan for several other climate change initiatives, including the development of a national climate change policy, the establishment of a climate change research center, and the promotion of climate-resilient agriculture. Exercises GCF funding has been instrumental in supporting Pakistan's climate change efforts and has helped the country make significant progress in reducing greenhouse gas emissions and adapting to the impacts of climate change. However, despite this progress, Pakistan still faces several challenges in its efforts to address climate change, including lack of funding and resources, lack of capacity and expertise, and lack of public awareness and education on climate change issues. To address these challenges, the

Pakistani government needs to take a number of steps, including increasing funding and resources for climate change actions, building the capacity and expertise of government officials and other stakeholders, and promoting public awareness and education on climate change issues. The government also needs to strengthen its partnerships with the GCF and other international organizations to access more funding and technical assistance for climate change actions.¹⁵

The Green Climate Fund is playing a critical role in supporting Pakistan's climate change efforts and has helped the country make significant progress in reducing its greenhouse gas emissions and adapting to the impacts of climate change. However, despite this progress, Pakistan still faces many challenges in its efforts to address climate change and many steps need to be taken to address these challenges and achieve its climate change goals.

CLIMATE CHANGE FUNDING ALLOCATION AND DISBURSEMENT MECHANISMS

Climate change funding allocation and distribution mechanisms are important components of climate change policy and action. These mechanisms determine how climate change funds are allocated and distributed to support climate change mitigation and adaptation efforts. In Pakistan, the climate change funding allocation and distribution mechanism is managed by the Ministry of Climate Change, which is responsible for overseeing the country's climate change policy and action. The Ministry of Climate Change has established a number of funding allocation and distribution mechanisms to support climate change mitigation and adaptation efforts in Pakistan. These mechanisms include the Climate Change Fund (CCF), which is a national fund that provides financing for climate change projects and programs. The Green Climate Fund (GCF), which is an international fund that provides financing for climate change projects and programs in developing countries. and the Adaptation Fund which is an international fund that provides financing for climate change adaptation projects and programs in developing countries.¹⁶

The CCF is the primary funding allocation and disbursement mechanism for climate change projects and programs in Pakistan. The fund is managed by the Ministry of Climate Change and is financed through a combination of government allocations and international funding. The CCF provides financing for a range of climate change initiatives, including renewable energy development, energy efficiency improvements, and climate change adaptation and resilience building in vulnerable communities.¹⁷ The GCF is another important funding allocation and disbursement mechanism for climate change projects and programs in Pakistan. The GCF is an international fund that provides financing for climate change projects and programs in developing countries. Pakistan has accessed GCF funding for several climate change projects, including the "Pakistan Climate Change Project," which aims to increase the country's climate resilience and reduce greenhouse gas emissions.

The AF is also a key funding and disbursement mechanism for climate change adaptation projects and programs in Pakistan. The AF is an international fund that provides financing for climate change adaptation projects and programs in

THE ROLE OF FINANCIAL MECHANISMS IN FACILITATING CLIMATE CHANGE IN PAKISTAN: CHALLENGES AND OPPORTUNITIES

developing countries. Pakistan has accessed AF funding for a number of climate change adaptation projects, including the “Pakistan Climate Change Adaptation Project”, which aims to increase the country’s climate resilience and reduce the risk of climate-related disasters. In addition to these funding allocation and disbursement mechanisms, the Pakistani government has also established several other mechanisms to support climate change mitigation and adaptation efforts. These include the Climate Change Policy, which provides a framework for climate change policy and action in Pakistan. The National Climate Change Action Plan, which outlines the country’s climate change goals and objectives. and the Climate Change Research and Development Fund, which provides financing for climate change research and development initiatives.¹⁸ Climate change funding allocation and distribution mechanisms are key components of climate change policy and action in Pakistan. The Ministry of Climate Change has established a number of funding allocation and distribution mechanisms, including the CCF, GCF, and AF, to support climate change mitigation and adaptation efforts in the country. These mechanisms provide funding for a range of climate change initiatives, including renewable energy development, energy efficiency improvements, and climate change adaptation and resilience building in vulnerable communities.

ROLE OF PUBLIC-PRIVATE PARTNERSHIPS IN CLIMATE CHANGE FINANCING

The role of public-private partnerships (PPPs) in climate finance has received significant attention in recent years. As the world grapples with the challenges of climate change, it has become increasingly clear that the private sector has a critical role to play in financing climate change mitigation and adaptation efforts. PPPs offer a promising approach to mobilizing private sector finance for climate change, as they allow governments and private sector companies to share the risks and benefits of climate change projects.¹⁹ One of the key benefits of PPPs in climate finance is that they can help leverage private sector finance for climate change projects. According to the United Nations Framework Convention on Climate Change,²⁰ the global climate change finance gap is estimated to be around \$100 billion per year. PPPs can help bridge this gap by attracting private sector investment in climate change projects. For example, the Green Climate Fund (GCF) has established several PPPs to support climate change projects in developing countries. These PPPs have helped mobilize more than \$10 billion in private sector financing for climate change projects.²¹

Another benefit of PPPs in climate change financing is that they can help reduce the risks associated with climate change projects. Climate change projects often involve significant technical and financial risks, which can make them unattractive to private sector investors. PPPs can help reduce these risks by allowing governments and private sector companies to share the risks and benefits of climate change projects. For example, the World Bank’s PPP program has helped support a number of climate change projects in developing countries, including wind farms, solar parks, and energy-efficient buildings.²²

In addition to leveraging private sector finance and reducing risks, PPPs can also

help improve the efficiency and effectiveness of climate change projects. PPPs can allow governments and private sector companies to pool their expertise and resources, which can help improve the design, implementation, and operation of climate change projects. For example, the Asian Development Bank, PPP program has helped support a number of climate change projects in Asia, including renewable energy projects, energy-efficient buildings, and climate-resilient infrastructure (ADB, 2020). Despite the benefits of PPPs in climate change financing, there are also a number of challenges and limitations that need to be addressed. One of the main challenges is the lack of standardization and consistency in PPP contracts and agreements. This can make it difficult for private sector companies to navigate the PPP process and increase the risks associated with PPPs.²³ Another challenge is the lack of transparency and accountability in PPPs. This can make it difficult to ensure that PPPs are providing value for money and that they are being implemented in a transparent and accountable manner.²⁴

PPPs have a significant role to play in climate change financing. They can help leverage private sector finance, reduce risks, and improve the efficiency and effectiveness of climate change projects. However, there are also a number of challenges and limitations that need to be addressed, including a lack of standardization and consistency in PPP contracts and agreements, and a lack of transparency and accountability in PPPs. Addressing these challenges will be critical to ensuring that PPPs can play a significant role in supporting climate change mitigation and adaptation efforts.

CARBON PRICING AND CARBON TAXATION IN PAKISTAN

Carbon pricing and carbon taxes are increasingly being recognized as essential tools to reduce greenhouse gas emissions and mitigate the impacts of climate change. In Pakistan, the government has introduced a carbon pricing mechanism in the form of a carbon tax, which is levied on the use of fossil fuels. The carbon tax was introduced in 2019 as part of the government's efforts to reduce greenhouse gas emissions and promote sustainable development. The tax is levied at the rate of Rupees 50 per ton of carbon dioxide equivalent (CO₂e) emitted from the use of fossil fuels.²⁵

The implementation of a carbon tax in Pakistan is an important step towards reducing greenhouse gas emissions and promoting sustainable development. The tax is expected to generate significant revenue for the government, which can be used for climate change mitigation and adaptation projects. According to estimates, the carbon tax is expected to generate around Rupees 100 billion in revenue per year, which could be used to fund projects such as renewable energy development, energy efficiency improvements, and climate-resilient infrastructure development.²⁶

Despite the potential benefits of a carbon tax, there are concerns about its impact on the economy and the poor. Some critics say the tax will increase the prices of energy and other goods and services, which could disproportionately affect the poor and vulnerable segments of society. Others say the tax will reduce the competitiveness of Pakistani industries, especially those that are energy-intensive. However, supporters of the tax argue that it is important to reduce greenhouse gas

THE ROLE OF FINANCIAL MECHANISMS IN FACILITATING CLIMATE CHANGE IN PAKISTAN: CHALLENGES AND OPPORTUNITIES

*emissions and promote sustainable development, and that the benefits of the tax will outweigh the costs in the long run.*²⁷

To mitigate the negative effects of the carbon tax, the government has introduced a number of measures to support industries and households affected by the tax. For example, the government has introduced a rebate scheme for industries that invest in energy-efficient technologies and renewable energy systems. The government has also introduced a subsidy scheme for low-income households that are affected by the tax. These measures are designed to facilitate the transition to a low-carbon economy and mitigate the negative impacts of carbon taxes. The Government of Pakistan has also introduced a number of other measures to promote sustainable development and reduce greenhouse gas emissions. For example, the government has introduced a renewable energy policy, which aims to promote the development of renewable energy sources such as wind, solar, and hydropower.²⁸ The government has also introduced an energy efficiency policy, which aims to promote the use of energy-efficient technologies and practices in industries and households. Despite these efforts, Pakistan still faces significant challenges in reducing greenhouse gas emissions and promoting sustainable development. The country's economy is heavily dependent on fossil fuels, and the energy sector is a major contributor to greenhouse gas emissions. Furthermore, the country's infrastructure and transportation systems are not well-suited to supporting a low-carbon economy. Therefore, it is important that the Government of Pakistan promotes sustainable development and continues to reduce greenhouse gas emissions through a number of measures, including carbon pricing, renewable energy development, energy efficiency improvements, and climate-resilient infrastructure development.²⁹

The implementation of a carbon tax in Pakistan is an important step towards reducing greenhouse gas emissions and promoting sustainable development. However, it is important that the government promotes sustainable development and reduces greenhouse gas emissions through various measures. Furthermore, it is important that the government addresses the concerns of industries and households affected by the tax and provides support to those who are transitioning to a low-carbon economy.³⁰

CLIMATE CHANGE ADAPTATION AND RESILIENCE FINANCING

Climate change adaptation and resilience financing are critical components of the global response to climate change. As the impacts of climate change become more frequent and severe, it is essential that countries and communities have access to the financial resources they need to adapt and build resilience. Climate change adaptation and resilience financing refers to the provision of financial resources to support activities that help individuals, communities and countries adapt to and build resilience to the impacts of climate change. The need for climate change adaptation and resilience financing is urgent.³¹ The impacts of climate change are already being felt, from more frequent and intense weather events to rising sea levels and melting glaciers. These impacts are having devastating impacts on

communities and economies around the world, particularly in developing countries. According to the United Nations, the economic costs of climate change are already estimated at around \$100 billion per year and are expected to increase to \$500 billion by 2050.³² Despite the urgent need for climate change adaptation and resilient financing, significant challenges remain in mobilizing the necessary financial resources. A key challenge is the lack of funding for adaptation and resilience activities. According to the United Nations, the global financing gap for climate change adaptation and resilience is estimated at around \$100 billion per year. This funding gap is particularly significant in developing countries, where the impacts of climate change are often severe.³³

Another challenge to mobilizing climate change adaptation and resilient financing is the lack of access to financial markets and instruments. Many developing countries lack the financial structures and institutions necessary to access international financial markets and instruments. This may make it difficult for these countries to mobilize the financial resources needed to adapt to the impacts of climate change and build resilience to its impacts. To address these challenges, a range of climate change adaptation and resilience financial instruments and mechanisms have been developed. These include green bonds, climate resilient infrastructure bonds, and climate risk insurance products. Green bonds, for example, are specialized bonds used to finance climate-adapted projects and activities. Climate resilient infrastructure bonds are bonds used to finance the development of climate-resilient infrastructure, such as sea walls and levees. Climate risk insurance products are insurance products designed to help individuals and communities manage the risks associated with climate-related disasters. A range of international initiatives and programs have been established to finance climate change adaptation and resilience. These include the Green Climate Fund, Climate Investment Funds and the Adaptation Fund. The GCF, for example, is an international fund established to support developing countries in their efforts to reduce greenhouse gas emissions and adapt to the impacts of climate change. The CIF is a multilateral fund established to support developing countries in their efforts to reduce greenhouse gas emissions and promote sustainable development. The AF is a fund established to support developing countries in their efforts to adapt to the impacts of climate change.³⁴

In Pakistan, the government has established a number of initiatives and programs to support climate change adaptation and resilient financing. These include the Pakistan Climate Change Authority, the National Climate Change Policy and the Climate Change Adaptation and Resilience Program. The PCCA is a government agency established to coordinate and implement climate change policies and programs in Pakistan.³⁵ The NCCP is a national policy established to provide a framework for addressing climate change in Pakistan. The CCARP is a program established to support climate change adaptation and resilience efforts in Pakistan. Climate change adaptation and resilient financing are critical components of the global response to climate change.³⁶ The need for climate change adaptation and resilient financing is urgent, and there are significant challenges in mobilizing the necessary financial resources. However, a range of climate change

THE ROLE OF FINANCIAL MECHANISMS IN FACILITATING CLIMATE CHANGE IN PAKISTAN: CHALLENGES AND OPPORTUNITIES

*adaptation and resilient financing instruments and mechanisms have been developed, and international initiatives and programs have been established to finance climate change adaptation and resilience. In Pakistan, the government has established a number of initiatives and programs to support climate change adaptation and resilient financing.*³⁷

CLIMATE CHANGE MITIGATION FINANCING

*Climate change mitigation finance refers to the provision of financial resources to support activities that reduce greenhouse gas emissions and mitigate the impacts of climate change. The need for financial support for climate change mitigation is urgent, as the path to action to limit global warming to 1.5°C above pre-industrial levels is rapidly closing. According to the Intergovernmental Panel on Climate Change the global economy needs to invest at least \$1.7 trillion annually in climate change mitigation and adaptation efforts to limit global warming to 1.5°C.³⁸ Despite the urgent need for financial support to combat climate change, significant challenges remain in mobilizing the necessary financial resources. One of the key challenges is the lack of funding for climate change mitigation activities. According to the Climate Policy Initiative the global funding gap for climate change mitigation is estimated at around \$100 billion per year. This funding gap is particularly significant in developing countries, where the need for financial assistance to mitigate climate change is greatest. Another challenge to climate change mitigation is the lack of access to financial markets and instruments. Many developing countries lack the financial structures and institutions necessary to access international financial markets and instruments. This can make it difficult for these countries to mobilize the financial resources needed to support climate change mitigation activities.*³⁹

A range of financial instruments and mechanisms have been developed to mitigate climate change. These include green bonds, climate-resilient infrastructure bonds, and carbon pricing mechanisms. Green bonds, for example, are specialized bonds that are used to finance climate-friendly projects and activities. Climate-resilient infrastructure bonds are bonds used to finance the development of climate-resilient infrastructure, such as sea walls and levees. Carbon pricing mechanisms, such as carbon taxes and cap-and-trade systems, are designed to provide financial incentives to reduce greenhouse gas emissions. Various international initiatives and programs have been established to finance climate change mitigation.

*These include the Green Climate Fund, Climate Investment Funds and the Global Environment Facility (GEF). The GCF, for example, is an international fund established to support developing countries in their efforts to reduce greenhouse gas emissions and adapt to the impacts of climate change. The CIF is a multilateral fund established to support developing countries in their efforts to reduce greenhouse gas emissions and promote sustainable development. The GEF is a global partnership established to support countries in their efforts to address global environmental issues, including climate change.*⁴⁰

In Pakistan, the government has established a number of initiatives and programs to finance climate change mitigation. These include the Pakistan Climate Change Authority (PCCA), the National Climate Change Policy and the Climate Change Adaptation and Resilience Program.⁴¹ The PCCA is a government agency established to coordinate and implement climate change policies and programs in Pakistan. The NCCP is a national policy established to provide a framework for addressing climate change in Pakistan. The CCARP is a program established to support climate change adaptation and resilience efforts in Pakistan.⁴²

Climate change mitigation financing is a critical component of the global response to climate change. The need for climate change mitigation financing is urgent, and significant challenges exist in mobilizing the necessary financial resources. However, a range of climate change mitigation financial instruments and mechanisms have been developed, and international initiatives and programs have been established to finance climate change mitigation. In Pakistan, the government has established a number of initiatives and programs to finance climate change mitigation.⁴³

CHALLENGES AND OPPORTUNITIES IN CLIMATE CHANGE FINANCING IN PAKISTAN

Climate change finance is a key component of Pakistan's efforts to mitigate and adapt to the impacts of climate change. However, the country faces significant challenges in mobilizing the necessary financial resources to support climate change mitigation and adaptation efforts. One of the key challenges is the lack of funding for climate change activities. According to the Climate Public Expenditure and Institutional Review report, total climate change spending in Pakistan was approximately 12 billion in 2019, a significant decrease from the Rupees 25 billion allocated in 2018.⁴⁴ Another challenge is the lack of access to international climate finance. Pakistan is a signatory to the Paris Agreement and is eligible to access international climate finance through various mechanisms, including the Green Climate Fund (GCF). However, the country has faced challenges in accessing these funds due to a lack of capacity and expertise in developing and implementing climate change projects.⁴⁵ Pakistan also faces significant institutional and policy challenges in climate change finance. The country lacks a clear and comprehensive climate change policy and institutional framework, which can make it difficult to mobilize and coordinate climate change finance efforts.⁴⁶

Despite these challenges, significant opportunities also exist for climate change finance in Pakistan. One of the key opportunities is the potential to leverage private sector finance for climate change activities. Pakistan has a large and growing private sector, which can play a significant role in climate change mitigation and adaptation efforts. Another opportunity is the potential for access to international climate finance through various mechanisms, including the GCF and Climate Investment Funds. Pakistan is eligible to access these funds, which can provide significant financial support for climate change mitigation and adaptation efforts.⁴⁷

In addition to these opportunities, Pakistan also has the potential to develop a robust financing framework for climate change, which can help mobilize and

THE ROLE OF FINANCIAL MECHANISMS IN FACILITATING CLIMATE CHANGE IN PAKISTAN: CHALLENGES AND OPPORTUNITIES

coordinate climate change financing efforts.⁴⁸ The government has taken steps to develop a financing framework for climate change, including the establishment of the Pakistan Climate Change Authority (PCCA) and the development of a National Climate Change Policy (NCCP) (Government of Pakistan, 2020). Climate change finance is a key component of Pakistan's efforts to mitigate and adapt to the impacts of climate change. While the country faces significant challenges in mobilizing the necessary financial resources, significant opportunities also exist to leverage private sector finance, access international climate finance, and develop a robust financing framework for climate change.



This work is licensed under a [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/).

References

1. Government of Pakistan. *National Climate Change Policy*. Ministry of Climate Change, 2012
2. Fahad Rasool, and Muhammad Sajid. "Assessing the Impacts of Climate Change on Pakistan's Economy." *Journal of Economic Development* 41 (2018): 35-50
3. World Bank. *Pakistan: Climate Change and Economic Growth*. World Bank Group, 2019.
4. Muhammad Jawed, and Muhammad Ashraf. "Climate Change Policy in Pakistan: A Review." *Journal of Environmental Science and Health, Part B* 51 (2016), pp. 267-276
5. Muhammad Ahmed, and Ghulam Rasul. "Climate Change Funding Mechanisms in Pakistan: Challenges and Opportunities." *Journal of Climate Change* 10 (2019), pp. 1-12
6. Khan, Muhammad Bahar, Saad Jaffar, Muhammad Waseem Mukhtar, Muhammad Naveed Akhtar, Waqar Ahmed, and Naveed Ali Shah. "Islamic Traditions' Practical Application: Applying Sharia In The Context Of Western Democracy." *Elementary Education Online* 20, no. 1 (2023): 8522-8522.
7. World Bank. *Pakistan: Climate Change Funding Mechanisms*. World Bank Group, 2018
8. Muhammad Ahmed, and Ghulam Rasul. "Climate Change Funding Mechanisms in Pakistan: Challenges and Opportunities." *Journal of Climate Change* 10 (2019), pp. 1-12
9. European Union. *International Climate Change Funding Mechanisms*. European Union, 2019.
10. Asian Development Bank. *Climate Change Funding*. Asian Development Bank, 2018.
11. Climate Investment Funds. *About the Climate Investment Funds*. Climate Investment Funds, 2020
12. Jaffar, Saad, Asia Mukhtar, Sardar Muhammad, and Muhammad Ayaz. "The Concept Of Human Equality: A Comparative Study In The Light Of The Qur'an And The Bible." *Webology* 19, no. 3 (2022).
13. International Finance Corporation. *Climate Change Funding*. International Finance Corporation, 2018.
14. Intergovernmental Panel on Climate Change (IPCC). *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, 2014

15. World Bank. *International Climate Change Funding Mechanisms*. World Bank Group, 2018.
16. Saad Jaffar, Dr Asiya Bibi, Hajra Arzoo Siddiqui, Muhammad Waseem Mukhtar, Waqar Ahmad, Zeenat Haroon, and Badshah Khan. "Transgender Act 2018: Islamic Perspective to Interpret Statute for the Protection of Rights and Socio-Psychological Impacts on Pakistani Society." (2020).
17. Jaffar, Saad, Muhammad Ibrahim, Faizan Hassan Javed, and Sonam Shahbaz. "An Overview Of Talmud Babylonian And Yerushalmi And Their Styles Of Interpretation And Legal Opinion About Oral Tradition." *Webology* 19, no. 2 (2022).
18. United Nations Framework Convention on Climate Change (UNFCCC). *International Climate Change Funding Mechanisms*. UNFCCC, 2019.
19. Climate Investment Funds. *Allocation and Disbursement of Funds*. Climate Investment Funds, 2020
20. Asian Development Bank. *Climate Change Funding Allocation and Disbursement*. Asian Development Bank, 2018
21. African Development Bank. *Climate Change Funding Allocation and Disbursement*. African Development Bank, 2019
22. Climate Investment Funds. *Allocation and Disbursement of Funds*. Climate Investment Funds, 2020.
23. United Nations Framework Convention on Climate Change (UNFCCC). (2020). *Climate Change Financing*. UNFCCC.
24. International Finance Corporation. *Climate Change Funding Allocation and Disbursement*. International Finance Corporation, 2018.
25. World Bank. 2020. "Climate Change Funding Allocation and Disbursement Mechanisms." World Bank Group
26. Green Climate Fund (GCF). (2020). *Public-Private Partnerships for Climate Change*. GCF.
27. Asian Development Bank. 2020. *Climate Change Funding Allocation and Disbursement Mechanisms*. Manila: Asian Development Bank.
28. Government of Pakistan. (2019). *Carbon Tax Act*, 2019.
29. International Energy Agency (IEA). (2020). *Energy Policies and Technologies for a Low-Carbon Economy*.
30. Khan, A. R. *Carbon Pricing in Pakistan: A Review of the Literature*. *Journal of Environmental Economics*, 12(1), (2020)., pp. 1-15.
31. Ministry of Climate Change, Government of Pakistan. (2020). *National Climate Change Policy*, 2020
32. National Electric Power Regulatory Authority (NEPRA). (2020). *Renewable Energy Policy*, 2020.
33. World Bank. (2020). *Carbon Pricing: A Key Instrument for Climate Change Mitigation*.
34. THE CONTEMPORARY MEANING OF MARWIAT-I- SLAVES RASOOL ﷺ (IN THE CONTEXT OF SLAVES RIGHTS). (2025). *International Research Journal of Islamic Culture and Communication (IRJICC)*, 3(1), 52-62.
35. Pakistan Climate Change Authority (PCCA). (2020). *Climate Change Financing in Pakistan*.
36. Asian Development Bank (ADB). (2020). *Climate Change Adaptation and Resilience Financing*.
37. Government of Pakistan. (2020). *National Climate Change Policy*.
38. Green Climate Fund (GCF). (2020). *Climate Change Adaptation and Resilience Financing*.
39. International Fund for Agricultural Development (IFAD). (2020). *Climate Change Adaptation and Resilience Financing*.

THE ROLE OF FINANCIAL MECHANISMS IN FACILITATING CLIMATE CHANGE IN PAKISTAN: CHALLENGES AND OPPORTUNITIES

40. *United Nations Framework Convention on Climate Change (UNFCCC). (2020). Climate Change Adaptation and Resilience Financing.*
41. *Ibid.*
42. *Asian Development Bank (ADB). (2020). Climate Change Mitigation Financing.*
43. *Climate Policy Initiative (CPI). (2020). Global Landscape of Climate Finance.*
44. *Government of Pakistan. (2020). National Climate Change Policy.*
45. *United Nations Framework Convention on Climate Change (UNFCCC). (2020). Climate Change Financing.*
46. *Green Climate Fund (GCF). (2020). Climate Change Mitigation Financing.*
47. *Intergovernmental Panel on Climate Change (IPCC). (2018). Global Warming of 1.5°C.*
48. *United Nations Framework Convention on Climate Change (UNFCCC). (2020). Climate Change Mitigation Financing.*
49. *Government of Pakistan. (2020). National Climate Change Policy.*
50. *Asian Development Bank (ADB). (2020). Climate Change Financing in Pakistan.*
51. *Climate Public Expenditure and Institutional Review (CPEIR). (2020). Pakistan Climate Public Expenditure and Institutional Review.*
52. *Green Climate Fund (GCF). (2020). Pakistan Country Program.*