Innovations

Climate Finance: Is It Possible to Reach Net-Zero Emissions by 2050? &Tracking financial sources to tackle climate change.

Mohammad Rafi Rahimi [a]* and Arika. Prabhakar[b]

[a]Ph.D. Research Scholar, Department of Commerce and Management Studies(DCMs), Andhra University, Andhra Pradesh, India

[b]Professor, Department of Commerce and Management Studies(DCMs), Andhra University, Andhra Pradesh, India

Corresponding Author: **Mohammad Rafi Rahimi**

Abstract:

Climate change is one of the crucial global issues that refers to long-term changes in temperature and weather patterns which is so critical for human beings' lives. The inaction costs are huge as we continuously release climate pollutants into the atmosphere, and there are no immediate actions, it became more challenging to reduce them so it will take more effort and cost to struggle against climate change. Politicians, scientists, social activists, and advocacy groups tackling the impact and cost of climate change to reduce to net zero carbon emissions, till now there are many conferences held such as Copenhagen 2009 and Paris Climate summit 2015 that industrialized countries committed billions of dollars to address the issue. The main purpose is to mitigate (shift away from fossil fuels to clean and renewable energy) and adapt (Funding for building the hurricane shelter or sea wall to manage the droughts and floods). To tackle climate change there's a need for a huge amount of money, which every country can't afford, where climate finance comes into play. Climate finance is a financial source to tackle climate change systematically and effectively. The main purpose is to raise money from industrialized economies such as the U.S.A, England, Germany, and Japan to support developing countries in getting precautions against the harmful impact of climate change and investing in economic-friendly technologies & resources.

Keywords:*1.Climate Change, 2.Climate Finance, 3.Net Zero Carbon*

Introduction

Adopting and struggling with climate change is an obligation no option. Achieving zero emissions means emitting and releasing no greenhouse gases into the atmosphere1, such as methane, carbon dioxide (CO2), nitrous oxide, or other greenhouse gases. Now, Climate change and raising funds to tackle this phenomenon is one of the crucial topics globally as "Climate change refers to long-term changes in temperature and weather patterns. These changes could be natural, such as variations in the solar cycle. However, since the 1800s, human activities have been the primary cause of climate change, primarily due to fossil fuels such as coal, oil, and gas"(United Nations, 2021)

climate finance is a new concept that confronts the challenges climate change poses to the development of countries, Climate finance refers to the financial resources mobilized to help developing countries mitigate and adapt to the impacts of climate change(Nakhooda et al., 2014).In other words, climate finance refers to the financial resources mobilized to help developing countries mitigate and adapt to the impacts of climate change, so every nation tries to make the best solution to bring down carbon use and tackle the issue systematically in this contemporary era, as per information the earth by passing each year getting warm and this issue became the biggest problem in near future, so that's better to tackle now and provide a sustainable environment for the next generation. Decarbonizing the worldwide energy system generally requires large-scale investment flows, with international climate finance playing a critical role in mobilizing private funds. The international community aims to raise at least USD 100 billion per year for mitigation and adaptation in developing countries(Steckel et al., 2017).

The inaction costs are huge as we continuously release climate and air pollutants into the atmosphere, and there are no immediate actions, it became more challenging to reduce them, so it will take more effort and cost to struggle against climate change.

Climate change is accelerating and impacting more communities around the world, consequently aggravating existing problems such as inequality, discrimination & poverty that is why climate finance should be targeted to help vulnerable population groups which rich countries owe developing countries a historic climate debt.

A few countries produce most of the emissions. The United States currently emits 6 gigatonnes of greenhouse gases per year. If the United States achieves this goal, global greenhouse gas emissions[2] would be reduced by about 10%(*National Academies*, 2021).

Finance is a vital issue for implementing climate action and raising ambition, climate finance can flow through a variety of channels, including biliteral and multilateral climate funds dedicated to combating climate change. So, financial markets are a primary vehicle for mitigating and hedging climate risk. They mitigate climate risk by facilitating the flow of investment capital toward green projects and away from brown industries and firms,(Giglio et al., 2021).

"Climate finance for carbon pricing could become a central pillar of sustainable development and promote international cooperation to achieve the climate targets laid down in the Paris Agreement" (Steckel et al., 2017).

The causes of high emissions are burning fossil fuels in industries like (thermal power plants and brick kilns), agricultural residue burning, biomass burning, and transportation. It needs to adapt and mitigate the impact of climate change through different projects also it's important to mention that all mitigation projects are not goods, large hydroelectric dams can displace people and destroy their livelihoods, white growing food corps biofuel can increase food insecurity. Misguided climate mitigation can easily make things worse.

In the present study, we evaluate the possibility of achieving net zero emission by 2050, Financing and funding rising role to keep the climate stable, how technology is feasible to achieve zero net carbon and the need & role of climate finance toward this goal.

[1] currently over 30 billion tons of carbon dioxide release into the atmosphere every year.

[2] The amount of greenhouse gas emissions are measured in terms of CO2-equivalent

Need for Climate Finance

Fossil energy is no option longer and must be replaced by clean or renewable energy. Climate finance is used to fund projects in mitigation or adaptations, the mitigation activities cover the projects to reduce greenhouse gases emissions by shifting energy products towards sustainable sources for example these projects can be funding clean public transportation in cities, or generating renewable energy from wind and solar power or plantation trees in deforested areas and provide a clean cooking solution which still using traditional biomass fuel like wood or dung.

The cause that we need climate finance is to struggle with the risk of climate change that threatens human life and the ecosystem of the earth.

Funding for adaptation projects like building hurricane shelters or sea walls, and restoring mangrove forests and wetlands help manage systems to deal with severe droughts or floods and provide farmers with better seeds and forecasts to improve their yielding despite unpredictable weather.

Small islands are hit the worst by the impact of climate change unfair because these nations are so poor and marginalized people in the case of economy.

Methodology:

Causes of climate change

Since the earth's formation over four billion years ago, climate change has existed throughout our planet's history. However, the global warming that has been observed over the last 150 years is unusual because it is the result of human activities. So, it is called the anthropogenic greenhouse effect which happens in addition to the natural greenhouse effect (*Elen Green Power*, n.d.).

Hence as we mentioned above "the causes of climate change can be natural and second human activities. but 97% of scientists who believe and attribute global warming to human activities. a landmark 2013 peer-reviewed study evaluated 10,306 scientists that confirmed global warming is real and largely caused by humans"(*Union of Concerned Scientists, United States of America*, n.d.).That currently release over 30 billion tons of carbon dioxide into the atmosphere every year.

The causes of climate change briefly can be as follow:

- **Manufacturing goods**
- **Cutting down forests**
- **Powering buildings**
- **Using transportation**
- **Generating power and burning coal, oil and gas produce carbon dioxide and nitrous oxide.**
- **Consuming too much**
- **Producing food**
- **Increasing livestock farming**
- **Fluorinated gases**
- **Fertilisers containing nitrogen**

Manufacturing and factories produce cement, iron, steel, cloths, plastic, and empowering buildings to need energy most countries to produce energy by burning fossil fuels (coal, oil, and gas) that cause to release of Carbon dioxide and nitrous oxide in to the atmosphere. using transportation such as cars, ships, and planes run by fossil fuels, that transportation accounts for nearly a quarter of global energy-related carbon dioxide emissions. Digestion by cows and sheep, use of fertilizers and manure for crop growth, and the use of energy to power farm equipment or fishing boats, mostly with fossil fuels All of this makes food production a significant contributor to climate change. Furthermore, greenhouse gas emissions are produced during the packaging and distribution of food.

Cutting down forests for any reason causes emissions, each year approximately 12 million hectares of forest are destroyed.

(**Effects and consequences of climate change)**

Climate pollutants are so dangerous, especially carbon dioxide that long last thousands of years and are a big threat to our planet's ecosystem and human lives. For this purpose, we must know about climate pollutants and how to reduce them. Climate change consequences according to Climate Action European Commission:

(1) **Natural consequences** (High temperatures, Drought and wildfires, Availability of fresh water, Floods, Sea level rise, Soils, Inland water, Marine environment)
(2) **Social threats** (Health, Employment, Vulnerable population, Education)
(3) **Threats to business** (Infrastructure and buildings, Energy, Agriculture and forestry, Insurance and Tourism, Cross-cutting issues for businesses)
(4) **Territorial threats** (The Arctic, Northern Europe, North-western Europe, Central, and Eastern Europe, Mediterranean region, Cities and urban areas, Mountain areas)

But as per common and brief classification the major consequences of climate change are:

- **Rising ocean**
- **More severe storm**
- **Hotter temperatures**
- **Increased droughts**
- **Loss of species**
- **Not enough food**
- **Poverty and displacement**
- **More health risks**

Economic costs of climate change

Climate change is a multifaceted and unpredictable phenomenon. This makes assessing economic impacts and developing robust and appropriately prioritized adaptation strategies difficult. (The Economic Costs of Climate Change: A Multi-Sector Impact Assessment for Vietnam).

Temperature increase:

According to the Re Swiss Institute, if global temperatures rise by 3.2°C, this could drop to 18% of the global economy's GDP by 2050.

Climate change is expected to have the greatest impact on Asian economies, with a 5.5% hit to GDP in the best scenario and a 26.5% hit in the worst-case scenario. Malaysia, Thailand, India, Philippines, and Indonesia are frequently the countries with the least amount of effort to mitigate and adapt to the effects of global warming.

Table 1. Temperature rise scenario

Regions	Temperature rise scenario, by mid-century			
	well-below 2° C increase	2° C increase	2.6° C increase	3.2° C increase
	Paris target	The likely range of global temperature gains		Sever case
simulating for economic loss impacts from rising temperatures in %GDP, relative to a world without climate change (0°C)				
World	-4.20%	-11.00%	-13.90%	-18.10%
OECD	-3.10%	-7.60%	-8.10%	-10.60%
North America	-3.10%	-6.90%	-7.40%	-9.50%
South America	-4.10%	-10.80%	-13.00%	-17.00%
Europe	-2.80%	-7.70%	-8.00%	-10.50%
Middle East & Africa	-4.70%	-14.00%	-21.50%	-27.60%
Asia	-5.50%	-14.90%	-20.40%	-26.50%
Advanced Asia	-3.30%	-9.50%	-11.70%	-15.40%
ASEAN	-4.20%	-17%	-29.00%	-37.40%
Oceania	-4.30%	-11.20%	-12.30%	-16.30%

Note: Temperature increased from pre-industrial times to mid-century, and is still related to rising emissions and increasing climate sensitivity (reaction of temperatures to emissions) from left to right. Source: Swiss Re institute

The most desirable outcome is to meet the Paris Agreement's temperature target. In comparison to 2.6°C and 3.2°C warmings, meeting the Paris Agreement target of well below 2°C warming could prevent up to 10% of expected mid-century global GDP loss. as shown in the above table, in more vulnerable regions, the benefit of reduced or avoided GDP decline by mid-century if the Climate Agreement target is met rather than a 2.6°C rise in temperatures could be as much as 25%.

Sea Level Rise

Sea Level Rise (SLR) would cause severe flooding in coastal areas, potentially causing billions of dollars in damages and threatening the lives of countless coastal residents", particularly in coastal bays and estuaries, where nearly 500 million people globally are at risk from sea level rise"(Hummel et al., 2021).

According to the OECD the Sea level continues to rise at a rate of about 3.2 millimeters per year. Coastal flood damage and adaptation costs in the twenty-first century sea-level rise is one of the world's most serious problems for human life and ecosystems, with a wide range of uncertainties in continental topography data, socioeconomic development, protection strategies, population data, and sea-level rise, the below table represents the population and GDP under different shared socioeconomic pathways SSP that sea level rise would affect the population and their GDP.

Table 2. World population and GDP in 2050 and 2100 under different SSPs

	Population in Billions		*GDP, billion US$/y*	
SSP/Years	2050	2100	2050	2100
SSP1	8.4	7.2	295000	771000
SSP2	9.3	9.8	260000	685000
SSP3	10.3	14.1	169000	355000
SSP4	9.4	11.8	242000	462000
SSP5	8.5	7.7	348000	1207000

In the above table, we used five population and gross domestic product (GDP) growth scenarios based on the shared socioeconomic pathways[3] (SSPs 1-5), taken from IIASA[4].

Natural Disasters

Disasters can be defined as sudden (unexpected time) or great misfortune whether from natural hazards or man-made that consequences are seriously destructive. Such as earthquakes, floods, drought, wildfires, cyclones, and severe storms.

According to world bank data "More than 2.4 million people and $3.7 trillion have been lost to natural disasters worldwide since 1980, with overall damages increasing by more than 800%, from $18 billion per year in the 1980s to $167 billion per year in the last decade." but the latest data presented by insurer Munich Re shows that the losses from natural catastrophes rose from $166 billion in 2019 to $210 billion in 2022 globally.

Natural disasters and climate change make poor communities more vulnerable.

Objectives

The objectives of this study are as follows:

- To study the impact of climate change on human lives.
- To assess the possibility of achieving net zero Carbon emission by 2050.
- To find out the correlation between Finance and climate change.
- To understand the role of conferences and international seminars on Fundraising.
- To find out solution for keeping the environment clean and far from pollution.

What is climate finance?

According to United Nations Framework Convention on Climate Change(UNFCCC),Climate finance refers to local, national, or transnational financing derived from private, public, and alternative sources to support climate change mitigation and adaptation actions.

Climate Finance works to provide the financial support required to fight the negative effects of climate change. It brings together government intervention and the private sector to create innovative climate change solutions. Pollutant removal, energy efficiency, and infrastructure are just a few examples.

That include climate-specific support mechanisms and financial assistance for mitigation and adaptation activities to accelerate and enable the transition to low-carbon, climate-resilient growth, and development through capacity building, economic development, research and development(R&D).

According to(*World Energy Outlook*, 2011), $16.9 trillion in new investment for new power generation is required to meet rising energy demand through 2035, with renewable energy (RE) accounting for 60% of the total.

There are different types of climate finance policy instruments to mobilize climate finance but the main types are as below:

- Green Bond Policy,
- Loan Guarantee Programs
- Tax Credits
- Target Lending

[3]The SSPs are an aspect of a new scenario framework developed by the climate change research community to facilitate integrated analyses of future climate impacts, vulnerabilities, adaptation, and mitigation.

[4] International Institute for Applied Systems Analysis (IIASA)

- Feed-in-Tariffs (FiT)
- Weather Indexed Insurance
- National Development Banks
- Disclosure Policies and National Climate Funds
- National Climate Fund

Each of the climate finance policies has strengths and weaknesses, for instance, Feed-in-Tariffs (FiT), loan guarantees, tax credits, and national development banks are all effective at mobilizing private finance; however, evidence of the effectiveness of national climate funds, disclosure, targeted lending, and green bonds are limited or weak (Climate finance policy in practice).

Table 3. Climate Finance Policies

Policy Instrument	Policy Definition
Green bonds	Green bonds are fixed-income instruments designed to promote sustainability, support climate-related projects, or raise money for climate and environmental projects.
Weather indexed insurance	Weather index-based insurance is an attractive approach to managing weather and climate risk that is related to agricultural production loss, such as drought.
Tax credits	A tax credit is a type of tax incentive that allows specific taxpayers to deduct money from their taxes in exchange for making new investments in environmentally friendly projects. Tax credits to encourage clean energy deployment are critical climate provisions.
Feed in Tariffs (FiT)	A feed-in tariff is an energy policy that promotes the development and spread of renewable energy generation. Feed-in tariff schemes pay low-carbon electricity providers or providers of renewable energy.
National climate fund	Government-created funding vehicles seek to access and mobilize funds from various domestic and international sources to tackle climate change.
National development banks	National development banks (NDBs) and development finance institutions are publicly owned, government-backed, domestically focused financial institutions with a specific development mandate that could help in the mobilization of commercial capital for low-carbon emission, climate-resilient infrastructure.
Targeted lending	requiring banks to lend a percentage of their credit or deposits to specific policies such as micro, small, and medium-sized enterprises, agriculture, social infrastructure, and renewable energy
Loan guarantees	Governments agree to fulfill the borrower's debt obligation if the borrower defaults on climate change projects.

Disclosure	set out for requiring businesses to report climate change information

Is It Possible to Reach Net-Zero Emissions by 2050?

As per Paris agreement to limit global warming to 1.5°C (2.7°F), emissions should be reduced by 45% by 2030 and reach net zero by 2050.Reaching net-zero emissions and limiting warming to 1.5°C can be just by reducing Short-Lived Climate Pollutants (SLCPs) and Long-Lived Climate Pollutants LLCPS, SLCPs include black carbon, methane, tropospheric ozone, and hydrofluorocarbons (HFCs) and are commonly associated with refrigeration, diesel-fueled vehicles, and solid-fuel cooking fires. responsible for up to 45% of current global warming.

Table 4. Short-lived climate pollutants lifetime

SLCPs	Lifetime
Hydrofluorocarbons (HFCS)	15 years(average)
Methane (CH4)	12 years
Black carbon (BC)	A few weeks
Tropospheric ozone (O3)	Hours and days

Due to the short lifetime in the atmosphere, reducing SLCPs can bring immediate air and climate quality benefits, that can be very cost-effective.

Table 5. Emission reduction of Gases

Gases	Emission reduction potential	
Black carbon	70%	By 2030
Methane	45%	
Hydrofluorocarbons	56%	

Source: ccacoalition.org

But CO2 lifetime is more than 100 years, it's about 100-1000 years and extremely potent in terms of global warming potential compared to long-lasting greenhouse gases such as CO2.

About 60% of GHG emissions come from just 10 countries, while the 100 least emitting contributed less than 3%.Energy makes up nearly three-quarters of global emissions, followed by agriculture.

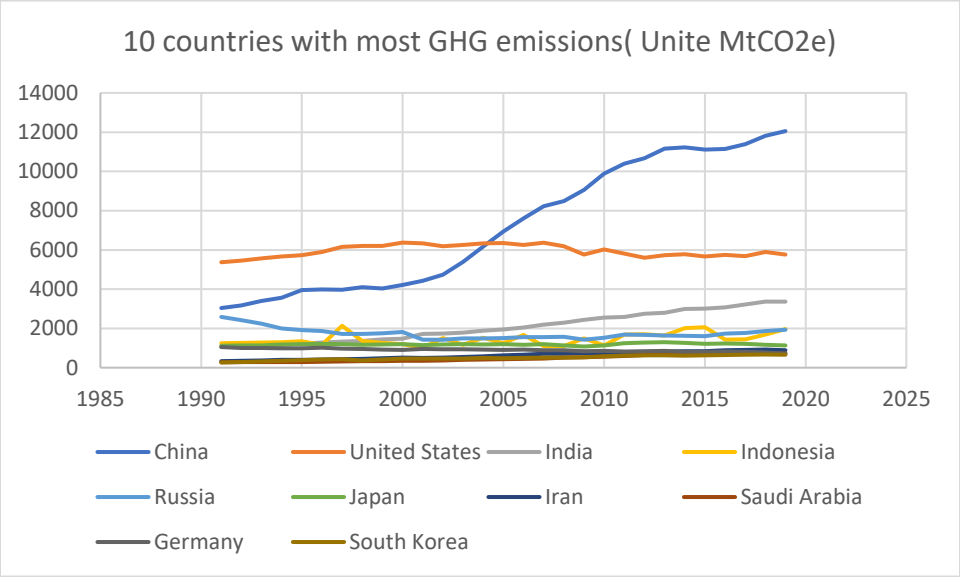
So, to reach net zero emissions by 2050 the largest economies of the world must decrease the emissions of greenhouse gases but conversely, as we see there's no sign of decreasing as per the following data published by climate watch data organizations.

Table 6. 10 Countries with the most GHG emissions, unite MtCO2e

	CHINA	UNITED STATES	INDIA	INDONESIA	RUSSIA	JAPAN	IRAN	SAUDI ARABIA	GERMANY	SOUTH KOREA
1991	3039.14	5372.07	1056.25	1246.27	2585.28	1121.71	332.58	274.22	1049.84	266.53
1992	3168.05	5456.12	1081.28	1266.98	2428.18	1134.81	354.38	291.77	1004.45	291.96
1993	3397.8	5567.55	1114.22	1282.35	2233.86	1128.24	362.41	289.62	995.96	323.65
1994	3557.37	5661.57	1158.48	1302.7	1995.87	1185.98	394.82	289.3	986.38	351.89
1995	3960.7	5729.69	1223.65	1339.1	1918.33	1201.33	405.33	288.63	982.02	384.86
1996	3982.11	5901	1272.74	1164.23	1874.95	1216.15	420.32	304.34	1012.11	412.98
1997	3977.65	6160.86	1331.88	2134.8	1723.24	1204.17	439.31	310.73	974.96	438.91
1998	4095.97	6208.83	1362.33	1366.9	1725.07	1157.78	441.72	327.05	951.88	373.64
1999	4028.58	6210.12	1440.38	1258.63	1759.66	1184.1	479.36	330.98	914.04	411.56
2000	4221.08	6372.54	1477.87	1190.41	1812.87	1200.81	507.02	347.62	906.43	469.57
2001	4430.04	6335.1	1725.86	1018.47	1423.46	1156.68	497.59	351.28	958.16	468.7
2002	4736.95	6182.64	1744.38	1500.73	1422.39	1189.23	512.73	369.76	941.97	461.26
2003	5387.28	6245.34	1787.88	1168	1498.74	1197.12	548.91	391.35	943.14	469.04
2004	6172.83	6331.91	1876.85	1517.63	1491.42	1188.83	585.5	408.2	926.57	492.96
2005	6934.85	6352.14	1948.11	1245.04	1513.85	1190.09	624.34	428.81	904.6	488.31
2006	7614.35	6260.2	2045.4	1664.11	1553.64	1168.68	667.21	451.62	913.4	496.62
2007	8224.19	6367.28	2191.17	1107.1	1559.85	1204.37	703.12	471.68	884.97	506.54
2008	8480.5	6184.08	2289.14	1093.88	1570.09	1137.35	711.29	511.98	887.83	519.43
2009	9055.11	5757.6	2438.92	1487.25	1427.44	1078.7	734.4	524.11	831.35	533.37
2010	9887.06	6026.14	2546.79	1131.73	1521.96	1136.62	737.61	569.68	861.83	585.4
2011	10388.48	5811.96	2584.75	1683.13	1693.95	1243.96	793.62	601.75	821.26	619.12
2012	10675.66	5593.24	2740.4	1702.3	1674.58	1286.53	793.95	638.88	834.47	622.55
2013	11168.26	5734.28	2804.34	1638.39	1633.1	1298.56	815.31	654.85	850.84	622.99
2014	11228.48	5779.53	2984.52	2015.5	1621.85	1256.16	844.13	698.29	809.96	612.48
2015	11108.86	5665.2	3003.07	2067.75	1602.81	1220.73	844.14	731.89	814.64	633.4
2016	11151.31	5743.85	3076.48	1434.45	1733.91	1229.82	881.05	739.82	817.47	648.88
2017	11385.48	5689.61	3215.07	1447.22	1769.68	1214.59	912.77	729.31	800.21	662.63
2018	11821.66	5892.37	3360.56	1692.36	1868.15	1172.32	925.58	715.23	771.48	669.7
2019	12055.41	5771	3363.59	1959.71	1924.82	1134.45	893.78	723.15	720.23	652.66

Source: climatewatchdata.org

Figure 1. Ten countries with most GHG emissions



Created and designed by: Ms. Excel

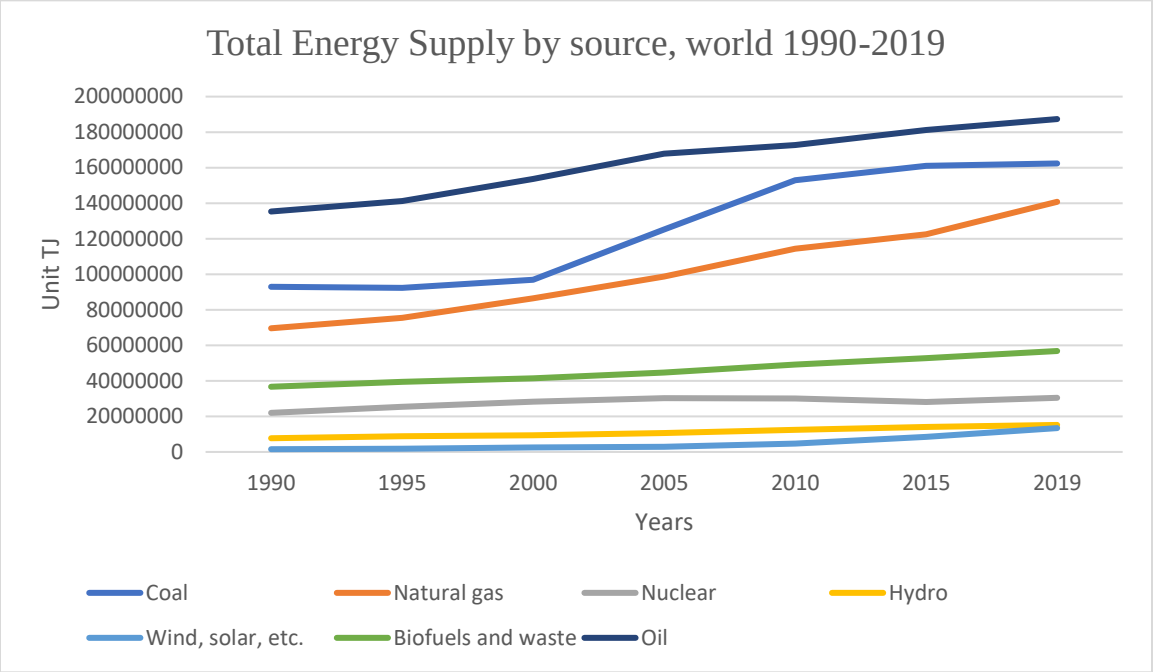
Specially China and America must effort and take part to tackle in climate change phenomenon and contribute financially to adaptations and mitigation projects. Mobilized private finance is being claimed in the absence of common standards and methodologies, and with limited transparency.

In 2016, developed countries published a roadmap outlining how they planned to meet the $100 billion target, stating that public climate finance would reach $66.8 billion by 2020 and mobilized private finance would be in the $26-66 billion range. Based on the most recent data, they may claim to be well on their way: While the amount of private finance mobilized in 2018 is unknown, the OECD estimates that it was $12.3 billion per year on average in 2016-17. The outstanding balance in 2017-18 could thus be estimated to be around $25 billion, with two to three years of financial reporting remaining before the $100 billion deadline in 2020.Reported public climate finance has increased from $44.5bn per year in 2015–16 to an estimated $59.5bn per year in 2017–18.

the commitment to meet the $100 billion that was done by the developed countries is highly questionable, it’s about 12 years after developed countries committed to mobilizing $100 billion in public and private finance, still, there's doubt and unclear that how the private finance component is being counted.

As per International Energy Agency (IEA) from 1990-2019 more energy was produced by oil and coal which shows that countries still depend on fossil fuels firmly this is a significant threat to climate, so governments and private institutions must start investing in renewable energy as much as possible to achieve net zero carbon. emissions.

Figure 2. Energy Supply by source, Globally

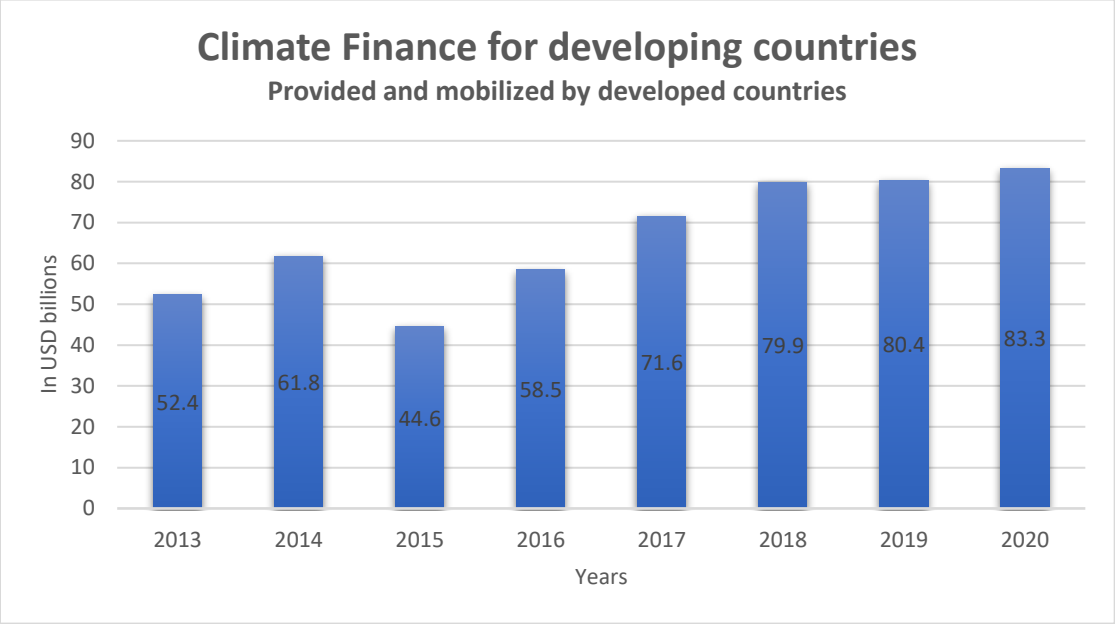


Designed by: Ms. Excel

The industrial nations collectively failed to meet the $100 billion goal in 2020. Climate finance provided and mobilized by developed countries for developing countries totaled USD 79.9 billion in 2018, USD 80.4 billion in 2019, and USD 83.3 billion in 2020 showing a 3.6% increase from 2019.According to new figures from the OECD. “The limited progress in overall climate finance volumes between 2018-2019 and 2019-2020 is disappointing. Over the period 2016-20, developing countries in Asia received 42% of total climate finance, followed by Africa (26%), and the Americas (17%).

As per (McCollum et al., 2013)estimation “a substantial “clean-energy investment gap” of some $800 billion/yr exists “globally between 2010 and 2050 in order to meet the 2C target. So, this can be a big challenge to industrialized economies toward achieving net zero carbon emission.

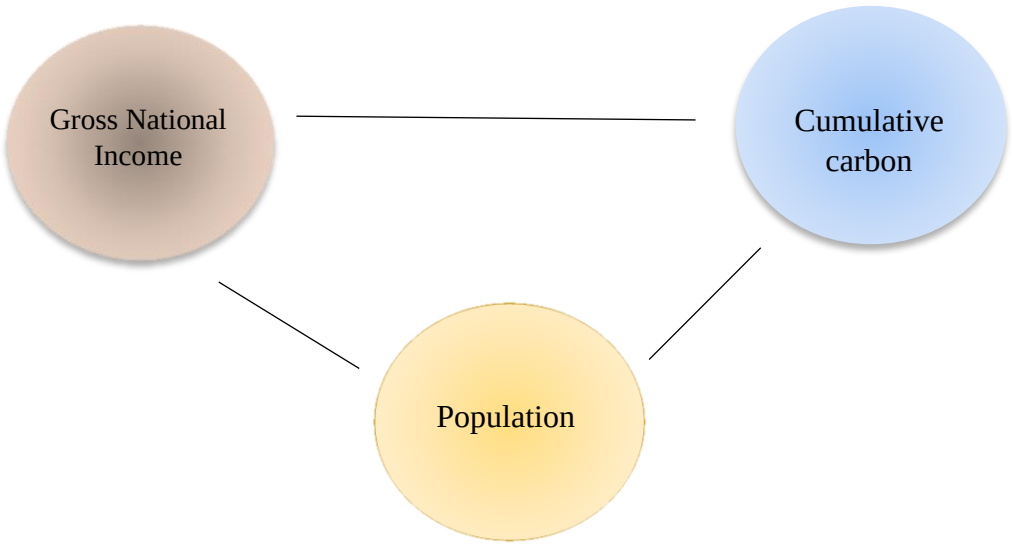
Figure 3. Climate finance for developing countries



Data source: OECD.Org

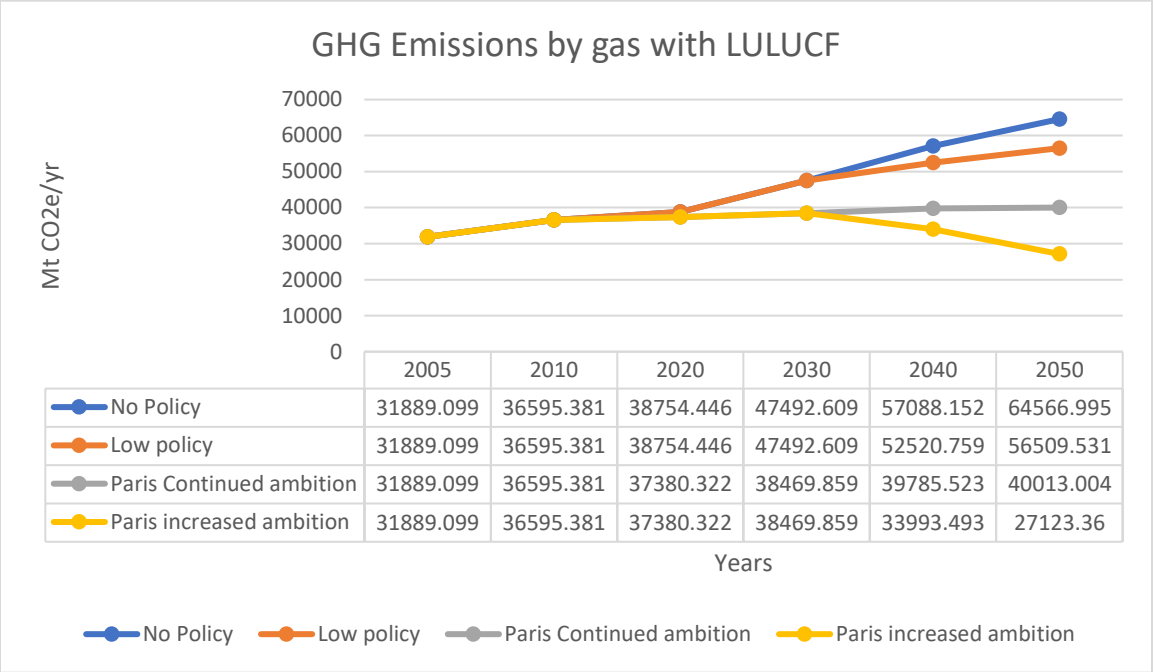
The funds include bilateral public, Multilateral public, Export credit, and mobilized private. Only 25% of reported public climate finance was for adaptation, while 66% was for mitigation, that shows there's no balance between mitigation and adaptation projects.

Figure 4. Metrics for assessing fair share of developing countries



For assessing the fair share of each developed country for climate finance goals there are three metrics as Gross national income, cumulative carbon dioxide emissions, and population, while imperfect, these metrics provide a starting point for holding individual national governments accountable.
Only seven of the 23 countries provided their fair share of climate finance in 2018, based on the average of different effort-sharing approaches.

Figure 5. Overview of World Pathway Scenario, Indicator CO2
GHG Emissions by gas with LULUCF[5]



	2005	2010	2020	2030	2040	2050
No Policy	31889.099	36595.381	38754.446	47492.609	57088.152	64566.995
Low policy	31889.099	36595.381	38754.446	47492.609	52520.759	56509.531
Paris Continued ambition	31889.099	36595.381	37380.322	38469.859	39785.523	40013.004
Paris increased ambition	31889.099	36595.381	37380.322	38469.859	33993.493	27123.36

Source: climatewatchdata.org
Data analysis and design by: MS. Excel

According to Global Change Assessment Model, shows the world scenario by 2050 from four perspectives (No Policy, Low Policy, Paris Continued ambition, and Paris increased ambition), if the countries follow Low policy or No policy, climate change will be accelerated and it will affect the human lives in every possible way. So, world industrialized economies must follow Paris increased ambition policy or at least Paris Continued ambition policy.

[5]The LULUCF sector (Land Use, Land Use Change, and Forestry) reports CO2 streams between geological reservoirs (biomass, soils, etc.) and the atmosphere on a territory's managed surfaces.

Conclusion:

- As per reports, the OECD countries failed to raise $100 billion by 2020 as per their commitment.
- There's no balance between mitigation projects and adaptation projects,
- The production of energy by fossil fuels has not stopped but is even rising.
- Challenge of the increasing population still exists in the least developing countries.
- The amount of private funds for climate finance is unclear and there's no standard accounting system for reporting the data.
- Despite all these issues achieving net zero emissions by 2050 is questionable.

Suggestion

- Research and development lead to improvements and increase efficiency and costs reduced. It also allows countries to develop new products, services, and new solutions to tackle climate change, it's also necessary to do research on climate finance to optimize fund raising.

- Reducing short-lived climate pollutants offers the greatest possibility of limiting global temperature rise and reducing food security risks.

- Integrated climate and air quality policies save money, increase efficiency, reduce complexity, prevent unpredicted negative consequences, and increase social, environmental, and economic benefits.

- All donors must pledge to significantly increase climate finance for least developing countries (LDCS) and small island developing states (SIDS), particularly grant-based assistance.

- Donors should be required to report the share of climate finance they contribute to LDCS and SIDS under UNFCCC rules and reporting guidelines.

- Reporting and tracking on mobilizing private finance should be conservative to avoid overcounting and build trust.

- concerned authorities for raising funds for climate change must make and arrange new accounting rules.
- At the upcoming conferences, the plan should commit to 'new and additional finance from developed countries and donors.

- To tackle climate change, the best efficient and effective climate finance policies should use to achieve the net zero emissions target.

- Even so, there is currently a lack of consistent and comprehensive data to track this commitment. the concerned organization must establish a reliable climate finance tracking system.

- Carbon pricing is one of the other important and distinguished topics for controlling carbon emissions.

- Local environmental governance to be set up for better implementing and monitoring climate policies.
- Environmental funds to be made mandatory at various levels

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Corresponding Email** : **Mohd.Rafirahimi@gmail.com , Arikaprabhakar999@gmail.com