Adaptation Finance

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Introduction

Over the past decades, it is quite evident that climate change leading to loss of property and damage is not a distant possibility but a happening reality. (Parry et al.[1]) Repeated failures to limit the greenhouse gas emissions to a safe level, have exposed the negligence of the responsible parties to the Adaption finance forefront, leaving the most vulnerable communities on the brink of demise. It is interesting to see how political relations marginalize the effect of global CSR initiatives. In this work, we closely review the evolution of Adaption Finance as a solution to hedge adverse impact caused by human-induced climate change. (Burton[2]) Financial resources dedicated to supporting climate change initiatives are referred to as climate finance. Climate change can happen either due to natural processes or it could be human-induced. Discussions concerning climate change started as early as 1960s with initial aim of weather monitoring and how will it affect global ecosystems. (Miller[3]) Gradually, the focus shifted to how to tackle or reverse the climate change which is directly associated to the human activities. After lot of debate, Scientists agreed in limiting the anthropogenic sources of greenhouse gas emissions. This aspect of abating the GHG emissions was the essence of Mitigation finance. (Halimanjaya[4])

To achieve this goal, UNFCC (United Nations Framework Convention on Climate Change) was formed in 1992 for serving as a global policy. Hence, mitigation policy as a concept was the heart of the global climate change regime, due to the root cause identified for the climate change to be emissions of GHG. Subsequent years went in negotiating the Kyoto Protocol,

with underlying focus mitigation, which was adopted in 1997. (Telesetsky[5]) In order to put the protocol in effect, there were certain queries to be resolved which were discussed in 1998 Buenos Aires Plan of Action (BAPA).(Halvorssen[6]) However, the negotiations broke down leading to conflicts which halted the adoption of the rules until COP-11 in 2005, when Marrakesh Accords (Wirth[7]) were adopted.

The take on adaption was slightly different than mitigation in the sense that mitigation efforts were revolving around reduction of emissions, while adaption focus was to address the consequences of climate change. It was quite evident that the effects of mitigation efforts won't be visible in the near future due to the time lag in implementation, so to minimise unwanted climate changes happening in real-time, adaption finance had to be prioritised with effect.(Burton[8])

Hence, in theory, mitigation and adaption were complementary as in the more mitigation is done, lesser the adaption efforts would be required and vice versa. Surprisingly, in reality both policies were seen as an alternative to each other by the policy makers since their inception, due to difference in opinions and perceptions.(Schipper[9])

Due to the overlooking of adaption finance by the policy makers in early 1990s, there was a pressure from the scholars for highlighting the need for Adaption to be as prominent as Mitigation in coming years. In 2001, adaption as a solution gained the deserved prominence via Marrakesh Accords.(Wirth[7])

Tracking of Adaption Finance:

Adaption, owing to its multi-dimensional nature, was a topic of confusion and debate for several years during late 1990s and early 2000s. In the early 1990s, Waggoner depicted this dilemma as "the first obstacle to adaptation is reluctance to contemplate it".(Waggoner[10])

There was no official definition of Adaption finance given by the UNFCC, however, during the convention's intergovernmental negotiating committee (INC) process, it was identified as 'all purposeful and deliberate activity taken in response to or in anticipation of the adverse effects of rapid climate change by a submission from Australia and New Zealand. The

definition provided by the Intergovernmental Panel on Climate Change was "Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities." (Skaalvik and Sevaldsen[11]) Adaption could be further categorised as "anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation". (Skaalvik and Sevaldsen[11]) Adaption was described as a distraction from mitigation efforts by the analysts. The idea of accepting adaption was associated with a 'defeatist' option(Parry et al.[1]), and there was a scare that it would be used by the Industrial countries to divert from the emissions reduction monitoring (Apuuli et al.[12]). Another major cause of early negligence was the overestimation of mitigation effectiveness. (Halimanjaya[4]) However, with the gradual uncovering of blockers in the efforts it was clear that there is a clear misalignment in what was thought and what we achieved. These blockers in advancing mitigation techniques compelled developing nations to seek adaption as the strategy to look forward for.(Roberts et al.[13])

As evident, there was no major emphasis by 1992 UNFCC (Bodansky[14]) and Kyoto protocol (Telesetsky[5]). From the initial understanding to current view, adaption evolved slowly. Alliance of of Small Island States (AOSIS, since 1991) played a huge role in putting pressure on developed nations to acknowledge vulnerability and adaption issues. One of the major reasons for political conflicts among the countries was the argument of "polluter pays principle"(Apuuli et al.[12]), wherein the environmentalists argued that the countries should pay on the basis of their differentiated responsibilities and capabilities. (Füssel[15]) It was widely debated that the countries who are least contributors are the most vulnerable to the harmful effects of climate changes. Keeping in mind, Convention established the leadership role of Industrial countries ('Annex I Countries') for climate change damage control. AIC were supposed to help NAICs in implementation and incremental efforts.(Müller[16]) In 1995, during the COP1 in Berlin, for the first time, there was a discussion for adaption activity funding. There was a suggestion in COP1 to utilise GEF (Global Environmental Facility) to finance adaption needs. GEF was established as a pilot program in 1991 under the World

Bank. (Reed[17]) In order to find the most vulnerable countries and people, it was important to indicate the priority of adaption. Adaptive Capacity (Engle[18]) was used as an indicator to reflect one entity's tolerance to change in climate. Insurance as an instrument of adaption was first suggested by AOSIS. As far as funding was concerned (Garrido et al.[19]), wealthy AICs initially resisted to commit to any fund provisions, due to their liability with regards to GHG emissions. (Füssel[15]) COP7 in 2001 proved to be a significant upturn for adaption awareness with Marrakesh Accords (Wirth[7]), which led to formation of a) Special Climate Change Fund (SCCF), b) Least Developed Countries Fund (LDCF), and c) Adaption Fund (AF) under the KP. The promising point for AF was that the funding derived from Clean Development Mechanism (CDM) (Fankhauser and Martin[20]), which is not associated with any government. There is a 2% levy on CDM certified emissions which fund the AF. Most of the CDM projects were hosted by then developing countries (India, Brazil, China)(Fankhauser and Martin[20]). Next major milestone for adaption happened in COP12 (Kenya) where the structure of AF was finalized and there were calls for adoption of separate adaption protocol (Okereke et al.[21]).

In COP14 held in Poznan, public & private insurance schemes were discussed to address damages caused by extreme weather events. A major setback happened in COP15 when a group of companies (USA, Brazil, South Africa, China and India) undermined Kyoto framework and turned to 'bottom-up' structure for pledges of emission reduction.(Khan and Roberts[22]) As per KP, efforts were to limit the increase in global temperature not more than 2 degrees Celsius, however with this new approach sum of individual emissions was resulting in 3.0–5.0 degrees of warming.(Khan and Roberts[22]) The developed nations pledged $30 bn as 'fast track' finance to the developing countries and $100bn annually moving forward. This funding was decided to flow via Green Climate Fund (Bowman and Minas[23]), which came into effect finally in COP18 (Doha). Although there was skepticism of how much of the pledged amount will actually be provided, and the claim of providing $10bn news and additional fund failed miserably as it was found that only 33% of these funds were new, with

majority of them a loans. As the trend emerged, adaption financing too various branches and instruments but was too scattered to make synergies globally because of which, the scaling of adaption efforts remained out of question.

Sources and Trend of Adaption Finance Majority of public finance commitments were from DFIs followed by Governments and then Climate Funds. The instruments mainly constituted of grants, insurance, low-cost debt, and equity.(Neufeldt et al.[24]). As per the UNEP Adaption gap report of 2015, Estimated costs of adaptation in 2030 was likely to be in the range of US$140-300 billion per annum, with the adaption finance available $26 bn. These huge adaption gap was an alarming figure to sustainability. The funding commitments mainly focused on certain sectors namely agriculture, water, coastal & health.(Neufeldt et al.[24]) The Paris Agreement restated the 2020 commitment by developed country parties of mobilizing US$100 billion per year for adaptation and mitigation until 2025, and requires parties to increase that commitment after 2025.(Clémençon[25])

ODA (Klein et al.[26]) constituted Grants (66%) and Loans (32%), while in bilateral DFIs, most common instrument was low-cost loans(80%). Market Rate loans (84%) formed the bulk of multi-lateral DFIs. (Neufeldt et al.[24])

In 2020, NbS became a popular concept (Nature-based solutions) as they are inexpensive options that may be successful in lowering climate risks. (Seddon et al.[27]) NbS can play a significant role in climate change adaptation. Although higher degrees of climate change may restrict the effectiveness of NbS, which further underlines need for intact mitigation activity to guarantee the future contribution to adaptation.

Over the last couple of years, Multilateral development banks and bilateral banks form the major finance providers of adaption for adaption related projects. From 2012 to 2023, bilateral flows proportion increased for adaption projects and reduced for mitigation.(Müller[16])

Themes in Academic Records: Early existing literature on adaption finance covered conceptual history (Schipper[9]), funding options for adaption finance (Mace[28]) (Mace[29]), and tracing the adaption policy post 1992. (Gupta[30]) The review on adaption policy by Khan

(Khan and Roberts[22]) studies the evolution by dividing two decades post 1992 into 3 periods.

With the increasing importance of Adaption finance in late 2010s, a lot of scholars started exploring the research gaps in the domain. The main themes studied revolved around:

a) Suggesting alternative financing mechanisms to aid in bridging the adaption gap: With the absence of appropriate funding practices in place, new financial instruments were discussed to increase the adaption funding like Carbon tax approach (Seo[31]), levy on CDM (Fankhauser and Martin[20]), and CCFM.(Bals et al.[32])

b) Measuring Adaptive Capacity: Adaptive capacity is an indicator which aids in prioritizing which country/sector/region should receive the funding first. This domain further goes on to evaluate the 'Contribution vs Responsibility' of individual countries and how to define vulnerability aspects. Indicator-based assessment to validate inequity in distribution of responsibility, and vulnerability was also a popular theme. (Füssel[15])

d)Analysing funds effectiveness: Another group of researchers are evaluating if the dedicated climate funds are able to disburse and collect the required numbers to maintain the adaption needs.(Buchner et al.[33])

Other themes include 'linking with Mitigation Finance' (Halimanjaya[4]), 'Relation with Development Finance'(Ayers and Huq[34]), 'Scaling climate adaption to urban areas'.(Brugmann[35])

Issues And Challenges in Future:

The UNEP reports clearly state how far off are the adaption efforts and the optimal levels. There is a huge mindset issue of countries when it comes to tackle the climate change, because they consider the funding as a 'charity' and not 'duty'. Countries like UK, Germany, US and Japan even went on to relabel their other efforts of climate control to fast-start finance just to fulfil their recent pledges, calling into credibility of the whole initiatives and damage of trust across world. Lack of Coordination in the efforts for adaption has led to

fragmentation complicating overall mechanism, delaying projects completion and hindering the assessment of current efforts.

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