

Climate Change Adaptation Policies Across the Globe: Does it Help in Sustainable Development?

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Abstract

This paper analyzes the interrelationship between the globalization of climate change adaptation policy and the philosophy of sustainable development. The analysis critically includes the philosophical arguments to bolster the current debate about the globalization of climate change adaptation policies and different strategies to ensure sustainable development. The philosophical argument presents the platform for further research on the issue of a merger between the two phenomena. This paper intends to answer the question as to what extent the globalized application of climate change adaptation policies secures the ground for sustainable development. The analysis shows that a successful acknowledgment of the difference and exiting similarities can open the door to an effective integration as desired and framed by SDG. It means a careful and thought driven integration between sustainable development and climate change adaptation policy can bolster the compatible relationship between the two of the most talked concepts in the field of social sciences which would benefit the sustenance and peaceful growth of human civilization.

Keywords: Adaptation; Climate change; Globalization; Policy; Sustainable development

Introduction

Sustainable development as one of the major development ideas does not often push the discussion to understand its critical relationship with climate change adaptation. Rigorous criticism of resource exploitative development models gave birth to the notion of sustainable development during the early phase of the 1990s. Since then countries across the globe have pushed themselves to secure the environment and natural resources for the next generation. The current needs cannot substitute future generations' consumption needs. This philosophy has guided many policies in different countries. At the same time, human civilization has been presented with another problem of climate change. Research has shown that after 1850 AD the world's climate has been changing very rapidly because of human intervention into the natural environment [1]. It is evident that people have made progress in terms of science and communication. The progress has boosted the growth of capitalist modes of production and trade. These factors significantly contributed to the change in the world's climate which is not very positive for human civilization. Thus, countries across the globe have tried to find policy interventions for the successful adaptation of the changing climate. Naturally, human civilization has learned to adopt different kinds of climate. Such natural phenomenon of adaptation has been made a policy option in last three decades.

This paper analyzes the interrelationship between the globalization of climate change adaptation policy and the philosophy of sustainable development. The analysis critically includes the philosophical arguments to bolster the current debate about the globalization of climate change adaptation policies and different strategies to ensure sustainable development. The philosophical argument presents the platform for further research on the issue of a merger between the two phenomena. This paper intends to answer the question as to what extent the globalized application of climate change adaptation policies secures the ground for sustainable development. The discussion begins with the two key concepts to build the framework for the normative analysis. The

normative analysis leads to the final inference. The normative arguments are structured from the current debate on the similar issue in existing body of literature.

Research Methodology

This research is based on secondary sources of information on climate change adaptation policies across the globe. The sources include research reports, online publications, government and NGO reports, scientific journals, international reports, books, journal articles and other academic resources on sustainable development, climate change adaptation, mitigation, and disaster risk reduction.

Climate change adaptation

In the 1990s, discussions of climate change adaptation began with the publication of an Intergovernmental Panel on Climate Change (IPCC) assessment report. Most countries and many regions and municipalities have started to develop and implement climate change adaptation strategies and plans since the beginning of the 21st century [2]. The 4th IPCC Assessment report (IPCC, 2007) identified different types of climate change adaptation including anticipatory, autonomous, and planned adaptation [3].

Anticipatory adaptation: Adaptation that takes place before impacts of climate change are observed. This kind of adaptation also referred to as proactive adaptation.

Autonomous adaptation: Adaptation that does not constitute a

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conscious response to climatic stimuli but is triggered by ecological changes in natural systems and by market or welfare changes in human systems also referred to as spontaneous adaptation.

Planned adaptation: Adaptation that is the result of a deliberate policy decision, based on an awareness that conditions have changed or are about to change and that action is required to return to, maintain, or achieve a desired state.

The Intergovernmental Panel on Climate Change's (IPCC) Fifth Assessment Report shows that the observed warming since the mid-20th century is predominantly due to an increase in greenhouse-gas concentrations as a result of emissions from human activities. Countries and other stakeholders acknowledge that there is an urgent need to reduce greenhouse gas emissions worldwide to avoid the most adverse effects of climate change, but adaptation is also needed. In 2015, three landmark global agendas were produced by the international community: the Paris Agreement; the Sustainable Development Goals (SDGs) within the framework of the 2030 Agenda for Sustainable Development and the Sendai Framework for Disaster Risk Reduction 2015–2030 as per UNCC Secretariat in 2017. Adapting to climate change is a key objective of these three post-2015 agendas.

Paris agreement

All participating countries adopted the first-ever universal, legally binding global climate deal at the Paris climate conference (UNFCCC, COP21) in December 2015. The central aim of the Paris Agreement is to make a bridge between today's policies and climate-neutrality before the end of the century with regard to mitigation. The governments agreed with the following issues:

1. A long-term goal of keeping the increase in global average temperature to well below 2°C compared with pre-industrial levels;
2. To pursue efforts to limit the increase to 1.5°C compared with pre-industrial levels, as this would significantly reduce risks and the impacts of climate change;
3. On the need for global emissions to peak as soon as possible, recognizing that this will take longer for developing countries;

4. To undertake rapid reductions thereafter, in accordance with the best available science.

Countries submitted comprehensive national climate action plans (INDCs) before and during the 2015 Paris conference. These are not yet enough to keep global warming below a 2°C increase, but the agreement outlines the way to achieve this target. Even if there is limit of a 2°C increase, high temperatures in many parts of the world will increase and climate change will have huge impact worldwide. Thus, adaptation to climate change has been recognized as an important policy pillar with a primary focus on vulnerable developing countries within the UNFCCC, which is complementary to the mitigation of climate change impacts.

Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) provide a window of opportunity for creating multidimensional operational approaches for climate change adaptation [4] (Figure 1) [5].

The 2030 Agenda for Sustainable Development and its 17 goals adopted by world leaders in 2015 embody a roadmap for progress that is sustainable and leaves no one behind. There are 169 targets for the 17 goals. Each target has 1-3 indicators used to measure progress toward reaching the targets. In total there are 304 indicators that will measure compliance.

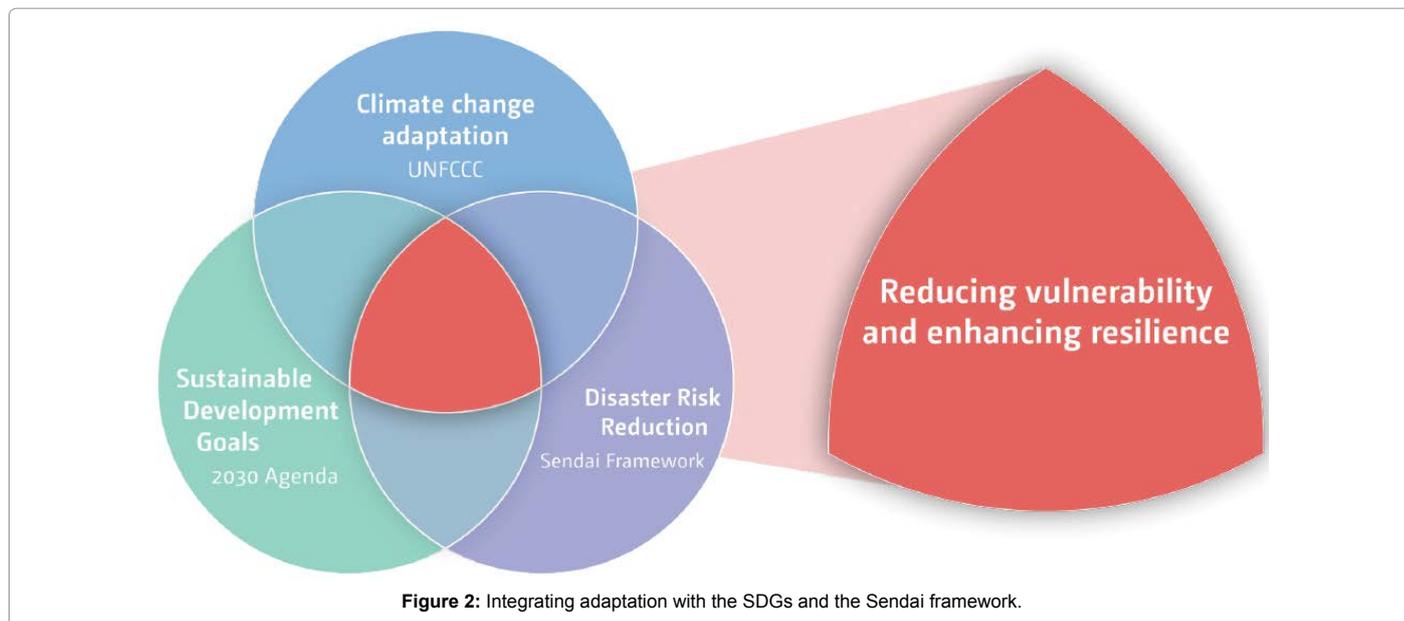
The targets for SDG 13 Climate action include strengthening resilience and adaptive capacity to climatic hazards, integrating climate change measures into national policies and plans, strengthening measures for education and awareness generation of people and institutions on the need to address disaster risks, enhanced financing for both mitigation and adaptation actions, and mechanisms for raising capacities of Least Developed Countries (LDCs) and small island developing states (SIDS), and other vulnerable groups (Figure 2).

Sendai framework

The Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) is the first major agreement of the post-2015 development agenda, with seven targets and four priorities for action.



Figure 1: Sustainable development goals.



It was endorsed by the United Nations General Assembly following the 2015 Third United Nations World Conference on Disaster Risk Reduction. Learning from the Hyogo Framework for Action (HFA), the Sendai Framework notes that “disasters, many of which are exacerbated by climate change and which are increasing in frequency and intensity, significantly impede progress towards sustainable development [6].

It is by now well-known that climate related changes are affecting people’s wellbeing across the world. Thus, adaptation is important. Similarly, climate change adaptation strategies have great potential to contribute both direct and indirect to achieve SDGs. However, climate change adaptation will have to build climate resilience to achieve the SDGs and must better equip societies to withstand shocks and disasters as per UNCC Secretariat in 2017.

Given interconnectedness of climate change, sustainable development and disaster risk reduction, the second UNFCCC technical expert meetings (TEMs) on adaptation, under the technical examination process on adaptation (TEP-A), focused on the opportunities and challenges associated with pursuing the three global agendas collaboratively, as well as on options to support their further integration, especially on the country level as per UNCC Secretariat in 2017.

Globalization of climate change adaptation policy

Climate change adaptation defined as, “adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects that moderates harm or exploits beneficial opportunities” denotes a unique challenge for the international political and economic system. Increasing international focus on climate change adaptation clearly shows that there is a certain level of confidence in climate change projections which is getting higher [3].

Adaptation actions, possibly, include, for example, relocation of human and material capital from the areas at risk of natural disasters caused by the changing pattern of the climate. In most cases flooding, storm, desertification, draught and earthquake are the types of natural disasters observed as the outcome of climate change. Interestingly, energy consumption and a network of diversified consumption are also

considered responsible for the climate change [7]. The main goal of the adaptation is to reduce many of the adverse impact of climate change on human civilization and the nature. Climate change has become an integral part of every development dialogue and decisions made by individuals, organizations, and governments. It is not considered as the external threat factor to be managed but is an intimate component of human civilization [8]. Inarguably adaptation has now been considered as an important component of contemporary discourse of politics and governance of global climate change. The article 2 of the United Nations Framework Convention on Climate Change (UNFCCC) promotes the urgency for continuous dialogue on climate change adaptation at global level. The article 2 underscores that adaptation to climate change must be seen from a food production, ecosystem health and economic development perspectives. It is to be noted that much of the climate policy and governance debate during the 1990s and early 2000s predominantly focused on mitigation. However, since last one decade there has been a growing concern over adaptation ion both theoretical arguments and real-world practice [9,10].

Nonetheless, the potential thoughts presented by historical antecedents of change in human societies and their environment the contemporary discourse of climate change adaptation has two quite distinctive foci [11]. First is concerned with the process how can adaptation to climate change be facilitated and enhanced. The second focuses on the notion which contends that there are limits to adaptation by society beyond which politically undesirable outcomes occur. It is important to note that efforts at mitigating further global climate change are contested in terms of desirability, effectiveness, and feasibility. However, the debate and contest across the globe on the issue of climate change adaptation has not been able to pull the trend of different adaptation policies in different countries.

The Sustainable Development Goals (SDG) as agreed by the member countries of the United Nations (UN) has given further formal shape to the globalization of climate change adaptation policies. The SDG framework has also given the opportunity to implement a universal policy merging the two concepts like sustainable development and climate change adaptation. In addition to SDG framework, the idea of globalizing the adaptation policies came from the United

Nations Framework Convention on Climate Change (UNFCCC). The globalization occurs through the initiation of the adaptation policies in many developing countries. Thus, the role of developing countries in taking policy initiatives to adopt climate change is crucial to understand the trend of globalization of the adaptation policy. The argument in favor of implementing adaptation policies in developing countries stresses the fact of vulnerability [12]. It has been argued that the change in global climate contributes to increasing vulnerability of people living in developing countries. Due to the rise in global temperature and frequent occurrence of natural disasters people living in developing countries have lesser capacity to deal with the changes in climate than those who are living in developed countries. Such vulnerability argument has propelled an enormous growth of financial assistance to developing countries' people to increase the adaptability to the climate changes. This also helps the course of the globalization of the climate change policy.

However, it cannot be ignored that the SDG framework is fostering the growth of policy interventions to achieve sustainable development across the globe while the human civilization is fighting against the changing climate due to many anthropogenic reasons. That is why it is time to consider the notions together to realize how they are compatible and feed each other. Before moving to the debate about the compatibility it is important to shed light on the sustainable development issue through the lens of SDG framework.

Sustainable development in current world

The report of the World Commission on Environment and Development in 1987 brought the concept of 'sustainable development'. Since then the concept has been linked with a series of normative ideas including: protection of the environment, especially the essential life-support functions of the global ecosphere, promotion of human welfare, especially the urgent development needs of the poor; concern for the well-being of the next generations; and public participation in environment and development decision making. It is regularly spoken about in terms of achieving an appropriate balance between the three pillars- the natural environment, economy, and society. It is about restoring the development trajectory so that genuine societal advance can be sustained.

The concept of sustainable development brings many complexities into the discussion. It is a highly contested concept as well. Despite a significant amount of agreement and consensus among different international agencies, there are many different perspectives on what it postulates that the contestation about the concept will be carried on. In academic sphere, there have been recurrent debates about whether it represents a rigorous philosophical or economic concept. Thus the difficulty of transcribing it into specific policy prescriptions Hence, Meadowcroft says; "Although such debates have generated insights, they have often missed the critical political point that this concept was not formulated as part of the technical vocabulary of social science, or as an operational rule that would allow policy outputs to be automatically read off from a list of situational inputs [13]. Rather it was designed as a normative point of reference for environment and development policy making. The politics, economy and social context of different countries have provided the fuel to the debate over sustainable development. Thus, the philosophy behind the concept has grown many dimensions to challenge the core idea of the concept.

Furthermore, the concept of sustainable development is not a spontaneous one. It requires intervention and goal-directed behavior

involving public, private and third sector organizations [13]. It implies that conceptually sustainable development is like the concept of climate change adaptation policy as they both require policy intervention. The promulgation of SDG has added to the idea of intervention as it has provided a framework for the countries to act to achieve sustainable development. The goals in the framework intentionally incorporated the norm of social justice, equality, and environmental preservation.

Climate change adaptation policy and sustainable development: Finding compatibility

SDG includes seventeen goals that provide the framework for the countries to achieve sustainability in a universal manner. The goals are; no poverty, zero hunger, good health a well-being, quality education, gender equality, clean water and sanitation, affordable and clean energy, decent work and economic growth, industry and innovation, reduced inequalities, sustainable cities and communities, responsible consumption and production, climate action, life below water, life on land, peace and justice and partnership for the goals. Having looked at the goals it appears that this framework provides a wider lens to incorporate the climate change issues.

However, the nature of globalization of climate change adaptation policy does not depict a universal picture. The climate change adaptation policies are more popular in the developing countries as they are considered as the most vulnerable to rapidly changing conditions of the climate. It clearly shows the politics of global decision making and power based on knowledge production. The contribution of different developed countries to the climate change has propelled the argument in favor of building capacity of the vulnerable countries through funding different programs and projects. Here funding is inarguable to be provided by those developed countries whose contribution to the climate change is much higher than their developing counterparts. Interestingly, SDG has been accepted as a universal framework to achieve sustainable development. It is well known that the framework is being considered as an umbrella for different other development policies. Importantly, climate change adaptation policies rely on the contexts whereas, SDG framework, being an umbrella policy, does not talk about the context in-depth.

There is a growing concern over the governance of the funds to build capacity for successful adaptation to the climate change. Corruption, lapses, and misuse in the governance of such capacity building projects have been regularly reported by different forums and organizations [14]. However, the empirical analysis of the governance of capacity building projects is beyond this paper's focus. Thus, it needs to be considered that there is a philosophical difference between SDG and climate change adaptation policies. SDG, basically provides a more proactive framework, whereas, adaptation to climate change is a reactive measure. Although, both policy concepts rely on intervention and targeted behavior from the public, private and third sector organizations the core difference between these two can raise the question as to how they feed each other.

Climate change adaptation policies are debated and discussed to deal with the changes occurring in the climate. On the other hand, SDG underscores some important policy agendas to build an environment which does not change over a significant period of time. SDG seeks to preserve the nature and environment for the future generation. Thus, it echoes the slogan of precautionary measures not a reaction to the changing climate. SDG requires different stakeholders and actors to act in a way which reduces further damage to the climate. The argument in favor of climate change adaptation policy does not necessarily resonates

the voice of those who are contributing to the climate change as anthropogenic agents [15]. Although they have shown concerns over the capacity of the adaptation of different vulnerable countries and communities they have not been able to redesign their economy and society to reduce the amount of contribution to climate change.

It implies that SDG, being a universal framework, considers each community, society, and country equal and pushes to take policy decision for eliminating any harm caused by anthropogenic agents. Frequent push for climate change adaptation policy would not encourage people to consider the phenomenon of sustainable development from an in-depth analytical point of view. Because, adaptation policies just highlight the way how a society, community, and country can successfully build its capacity to adapt the climate changes. Thus, people would think that if they are able to adapt successfully then they do not have to take responsibility to reduce the anthropogenic contribution to climate change.

The climate change adaptation policy requires a higher degree of concern from the vulnerable countries to contextualize the policy components. Interestingly, many times, due to lack of negotiating capability, the vulnerable countries fail to address the sector and area which require prioritized attention. It leads to a disparity between sectors and leaves further holes in the adaptation to climate change. Prioritization is a crucial aspect of the adaptation policy. The prioritization is understood based on the data and empirical evidence of climate change effects. It is needed to recognize that public, private and third sector agencies suffer from a paradox between efficiency and equity according to Stone in 2012. Such recognition is required as these agencies seek to design adaptation policy by prioritizing sectors and geographical areas. Thus, it has often been seen that due to the practice of prioritization equal care of crucial sectors are ignored. Interestingly, ignoring different crucial sector can lead to the underachievement of sustainability. Because sustainable development requires each sector to perform together so that they feed each other in terms of resources and policy actions. This is what SDG tries to underscore by including seventeen goals. The debate over limited goals in Millennium Development Goals (MDG) has forced the scholars and practitioners to come up with a new framework like SDG which necessarily broadens its reach and focus. Hence, making choices and priorities to design adaptation policies based on vulnerability may lead to further damage to the course of actions for achieving sustainable development.

There are varieties of factors which determine the extent to which planned adaptation measures for climate change are needed at all policy level. The factors include 'exposure'- vulnerability of a particular region towards climate change; 'impact'- how much damage will be caused by climate change in that specific geographical area. It is important to address these factors. In order to deal with the challenges posed by these factors two most important measures for climate change need to be considered as policy options. First, proactive and reactive ways of adaptation measures. Second, adaptation and adaptive capacity building.

It is important to acknowledge that reactive adaptation measure consists of reacting to the adverse impacts of climate change once they occur. On the other hand, proactive measure of adaptation means acting ahead of time. It implies that the action should be taken before adverse impact occurs. The goal of the both measures denotes the actions to reduce vulnerability and to limit the adverse impacts and consequences. The distinction between the two measures lies in the philosophy of

acting based on the timing of the action. One measure relies on the action long before the change in the climate occurs. Whereas, the other one is the proponent of the actions taken as part of the reaction to ongoing climate change [16]. It appears that the proactive measure has a connection to the framework of SDG. It is already delineated that how SDG is focusing on the proactive measure. Thus, climate change adaptation policy can be effective in ensuring sustainable development if it only focuses on the proactive measures.

Bangladesh example: Journey towards climate action and achieving SDGs

For several decades Bangladesh has been considered as climate vulnerable country also one of the most disaster prone countries in the world because of its unique geographical location [17]. Even Bangladesh has been ranked seventh among the countries most affected by extreme weather events in 20 years since 1998 in the Global Climate Risk Index 2019 [18]. However, the country is on track towards becoming a climate resilient country and achieving the SDGs. Bangladesh has also signed the historic Paris Climate Agreement, aiming to take various measures to save the world from the disastrous consequences of climate change. In 2018 the government has renamed the Ministry of Environment and Forest (MoEF) as the Ministry of Environment, Forest and Climate Change (MoEFCC) in line with other countries of the world.

The government, NGOs, development partners and private sectors are supporting community adaptation and sectoral adaptation and disaster risk reduction activities. The government has already prepared National Adaptation Program of Action (NAPA) and Bangladesh Climate Change Strategy and Action Plan (BCCSAP), created climate change trust and climate change resilient funds, developed the climate change fiscal framework and initiated the inclusive budgeting and financing for climate resilient project [10]. The UNDP 2018 report 'National Adaptation Plan process in focus: Lessons from Bangladesh' highlights some adaptation actions:

1. More than 420 implemented projects under national funding of the Bangladesh Climate Change Trust Fund (BCCTF), including on river bank protective works, cyclone resilient housing, afforestation and stress-tolerant crop and seed varieties.
2. Four Global Environment Facility (GEF) Least Developed Country Fund (LDCF) projects on community based adaptation and Ecosystem-based Adaptation, both on-going and closed.
3. Six projects under the Climate Investment Funds (CIF) Pilot Program for Climate Resilience (PPCR), with both private and public sources of funding, in agriculture, infrastructure, coastal zone management and capacity building.

It is also revealed from another report titled "Sustainable Development Goals: Bangladesh Progress Report 2018" that the country is well prepared with a number of climate change related strategies, plans and actions. Through BCCTF, it has spent around 2700 crores of taka over last 8 years in climate change adaptation [19]. On the other hand, the poor and vulnerable communities are using their initiatives, indigenous knowledge and social networks to confront many of the climate change impacts.

Recently The MoEFCC has launched a roadmap and action plan to implement Bangladesh's Nationally Determined Contributions (NDC) in three sectors. To implement the Paris Agreement-which was ratified in 2016-the Bangladesh NDC implementation roadmap covers the period from 2016 to 2025. It focuses on the transport, power,

and industry sectors in the period leading up to 2020. The roadmap identifies 28 specific cross-cutting actions-along with detailed actions-as well as anticipated deadlines and indicative costs for each of the sectors.

Discussion

It is not very old that the consideration of adaptation to climate change has been undertaken largely of both the literature and practice of development [20,21]. Usually, development programs to enhance and strengthen livelihoods were not generally considered in climate change adaptation research and development practice. It is quite rare that risks associated with climate change are considered while planning development programs. Decision-making process related to development is often dominated by non-climatic stressors that acutely affect people's well-being including economic, social, health, equity and different environmental factors. The analysis of the normative arguments presents a clear picture which resonates the arguments that already recognized a separation between sustainable development and climate change adaptation as concept and praxis.

Initiatives in developing countries that promote development, poverty alleviation, improve access to technology and strengthen social capital along with the institutional arrangements are expected to reduce the vulnerability to climate change. Thus, many have argued for the integration of adaptation policies into existing development theory and practice [22-24]. The integration is often called as mainstreaming which necessarily involves the incorporation of initiatives, measures, and strategies to reduce vulnerability caused by climate change into other policies, programs, and projects [25-27].

Conclusion

The integration is needed to strengthen the functioning of sustainable development policies as declared in the SDG. Despite some philosophical differences between the two concepts, there is a strong possibility that these two go hand in hand. Both scholars and practitioners need to identify the differences and the pitfalls of having both of these operating separately. A successful acknowledgment of the difference and exiting similarities can open the door to an effective integration as desired and framed by SDG. It means a careful and thought driven integration between sustainable development and climate change adaptation policy can bolster the compatible relationship between the two of the most talked concepts in the field of social sciences which would benefit the sustenance and peaceful growth of human civilization.

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