Disaster Diplomacy in South Asian Countries: Readiness and Dependency

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LETTER OF RECOMMENDATION

I certify that this dissertation entitled **"Disaster Diplomacy in South Asian Countries: Readiness and Dependency"** has been prepared by **Pradip Khatiwada** under my supervision. I hereby recommend this dissertation for final examination by the research committee at the Department of International Relations and Diplomacy, Faculty of Humanities and Social Sciences, Tribhuvan University, in the fulfillment of the requirements for the MIRD 526 Thesis for the Master's Degree in International Relations and Diplomacy.

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DECLARATION

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17 June 2022

APPROVAL SHEET

ABSTRACT

Disasters disrupt daily lives and social systems and question prevailing social, economic, environmental, and political arrangements. Directly and indirectly, they create the conditions for instability and conflict by exacerbating social grievances and resource scarcities and accelerating changes in social systems. Despite a plethora of studies in the disaster realm, however, negligible attention has been devoted to understanding disaster diplomacy. This study takes a preliminary step in that direction, analyzing disasters in eight South Asian countries: Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka, and the Maldives. The study focuses on these countries' readiness for disaster management and dependency on foreign assistance in disaster and climate change-related policy formulation. It is based on five key disasters in each country (1990-2021) based on total deaths and people affected. Out of the eight South Asian countries, Afghanistan showed no readiness regarding climate policies. Likewise, Maldives has shown low readiness for the development of policies for disaster risk reduction. Out of the 80 policies studied about development assistance, only about 36 percent were found to be completely self-funded. In the top five disasters per country, the highest support was on technical assistance, which was provided in 82.5 percent of the disasters. In the maturity model, Afghanistan and Nepal were found in the classification of system discipline, which represents low development in disaster management. At the same time, Bangladesh and Bhutan were assessed to be in optimization classification, representing good indicators of disaster management. Overall, the research aims to enable an understanding of disaster diplomacy in the study countries by accessing the readiness and dependencies. More importantly, the findings from this study can be helpful for South Asian countries to identify the areas to strengthen their readiness and dependencies, develop resiliency, and focus on a collaborative approach to reducing disaster and climate risks for the future.

Keywords: Disaster diplomacy, South Asian countries, resiliency, climate risk, maturity model

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDIXES

LIST OF ABBREVIATIONS/ACRONYMS

ADB	Asian Development Bank
ANDMA	Afghanistan National Disaster Management Authority
BBIN	Bangladesh, Bhutan, India, Nepal
BCCSAP	Bangladesh climate change Strategy and Action Plan
BCCT	Bangladesh climate change Trust
CCA	climate change Adaptation
CCGAP	climate change and Gender Action Plan
CCMD	climate change Management Division
CCTFA	climate change Trust Fund Act
COVID	Coronavirus Disease
DDM	Department of Disaster Management
DMC	Disaster Management Centre
DMS	Disaster Management Strategy
DRR	Disaster Risk Reduction
EM-DAT	Emergency Events Database
EMF	Environmental Management Framework
GDP	Gross Domestic Product
GECDP	Gender, Environment, Climate Change, Disaster Risk Reduction, and Poverty
GESI	Gender Equality and Social Inclusion
GHG	Greenhouse Gases
HFA	Hyogo Framework for Action
INFORM	Index for Risk Management
IPCC	Intergovernmental Panel on Climate Change
ISDR	International Strategy for Disaster Reduction
KIS	Key Informant Surveys
LDCs	Least Developed Countries
MCPP	Mujib Climate Prosperity Plan
MoCC	Ministry of Climate Change
MoDMR	Ministry of Disaster Management and Relief
MoEFCC	Ministry of Environment, Forest and climate change
MoEnvmv	Ministry of Environment, Climate Change, and Technology
MoFE	Ministry of Forest and Environment
NAPAs	National Adaptation Programmes of Action
NAPCC	National Action Plan on climate change

NAP-SLCPs	National Action Plan for Reducing Short-Lived Climate Pollutants
NC	National Communication
NDC	Nationally Determined Contribution
NDMA	National Disaster Management Authority
NDMP	National Disaster Management Plan.
NDRRMA	National Disaster Risk Reduction and Management Authority
NEC	National Environment Commission
NEOP	National Emergency Operation Plan
NEPA	National Environmental Protection Agency
NGO	Non-governmental organization
NPDM	National Policy on Disaster Management
NRIFAP	National REDD+ Investment Framework and Action Plan
NRRP	National Recovery and Reconstruction Plan
REDD	Reducing Emissions from Deforestation and Forest Degradation
SAARC	South Asian Association for Regional Cooperation
SDG	Sustainable Development Goals
SFDRR	Sendai Framework for Disaster Risk Reduction
SOD	Standing Order on Disaster
TNA	Technology Needs Assessment
UK	United Kingdom
UN	United Nations
UNFCCC	United Nations Framework Convention on climate change
UNISDR	UN International Strategy for Disaster Reduction
USA	United States of America
USD	United States dollar

CHAPTER 1 INTRODUCTION

1.1 Background

The term diplomacy can be understood as a negotiation strategy that requires professional skills to formulate policies and strategies in the significance of amplifying the national interest of the state. According to Sir Ernest, the term diplomacy is the application of tact and intelligence to the conduct of formal relations between government officials of sovereign states (Satow, 1917). The 'diplomacy' of a state is popularly known as 'blundering' or 'skilled,' but such language tends to be indistinct (Gore-Booth, 1979). The Intergovernmental Panel on Climate Change (IPCC) terms disaster as "Severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic, or environmental effects that require an immediate emergency response to satisfy critical human needs and that may require external support for recovery" (Field et al., 2012). Combining these definitions, 'disaster diplomacy' can be understood as the process of professional engagement to deal with disasters beyond the country before, during, and after any disaster events take place.

Disaster diplomacy deals with the investigation of why and how disaster-related activities influence and do not influence conflict and partnership (Kelman, 2018). Kelman (2018) emphasizes that there are two key aspects to disaster; (i) situation before any disasters take place (prevention phase) where the preparedness, research, reduction of potential vulnerability, or damage mitigation plan can be implemented, and (ii) after the disaster occurs (cure phase) where the involvement could be in reconstruction, rehabilitation, relief, or other financial assistance. According to the Emergency Events Database (EM-DAT), the frequency, intensity, and impacts of disasters in Asia are widely growing, and over the past 20 years, they accounted for half of the

estimated economic loss worth USD 40 billion annual economic loss (ADB, 2013). Especially, the hydrometeorological and seismic hazard events are on the rise. According to CRED and UNISDR (2015), between 1995-2015, the flood affected 2.3 billion people, 95 percent of whom were from Asia.

According to Britannica (2022) dictionary, peninsular India and the Indo-Gangetic plain make up South Asia, a subregion of Asia. Bangladesh, Bhutan, India, Pakistan, Nepal, and Sri Lanka are all included in this region, along with Afghanistan and the Maldives, which are frequently regarded as being a part of South Asia. The South Asian region has leapfrogged in the economy and has adopted an extended version of the neoclassical growth model incorporating the technological advancement and role of human capital (ADB, 2013). As the rate of disaster impacts is increasing, the economic growth of this region can also be seen blooming. On one side, the economic growth and another side, impactful disaster events causing human and economic loss have drawn attention to the sustainable and strategic development of the region.

The emphasis of the study is to understand disaster events in the South Asian Association for Regional Cooperation (SAARC) countries and to see the implications and strategies of its foreign policy for disaster diplomacy. The study covers both disaster and climate impacts by analyzing initiatives of the South Asian countries in relation to undertaking or adopting disaster and climate change mitigation strategies, policy formation, and progress in the cycle of DRRM (Mitigation, Preparedness, Response, Recovery, and Reconstruction) and advancement in regional mechanisms to avert and reduce the risks.

The relevance of this study is also to investigate the readiness and dependency of South Asian countries in disaster management and the role played by disaster diplomacy in providing such assistance. The nexus for which is assessed in three folds: (i) assessing the foreign assistance

received by South Asian countries for the development of policies related to Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA); (ii) studying key disaster events over the past 31 years in the region and analyzing the role of foreign assistance in disaster management; and (iii) developing a conceptual framework of disaster diplomacy in South Asia analyzing the relationship between disaster and diplomacy that is presently not well developed.

1.2 Statement of the Problem

There is a common saying; nothing comes for free; someone must pay for it (Foreman, 1974). Likewise, any assistance during a disaster might involve a barter or a certain bargain —some are publicly advertised, whereas some are diplomatic. This is where the role of diplomacy takes place—meaningful negotiations and a long-term resilience plan (Kelman, 2012). Disaster diplomacy is not just about what happens to a disaster-struck area or how much impact is created; it is also about understanding the situation and having in-depth knowledge so that it will not repeat or if in case it reoccurs, will only bear minimum impact. In any disaster event, it always matters how the particular country can take necessary actions with its own capacities without looking for external support. Such dependencies on external support from different countries and agencies matter for both natural and human-made disaster events. During the first world war (1914 -1918), human-made disasters were more devastating than natural disasters, with most casualties owing to war-related famine and disease (Mougel, 2011). However, over the years, the scenario has been changing. Today's modern society suffers from dreadful natural disasters—more devastating than ever, with around a 10-fold increase in natural disaster frequency since 1960 (IEP, 2020). El-Sabh & Murty (1986) describe the relationship between the potential hazards (Man-made and Natural) that becomes dreadful disasters when exposed, including climate change and transboundary issues.

In the modern age, many human activities have led to dreadful disasters. Some of which create short-term consequences such as deforestation causing landslides or soil erosions, while some lead to long-term consequences such as Greenhouse Gas (GHG) emissions leading to climate change. All South Asian countries are impacted by climate change, with Maldives being at even more at-risk levels due to the alarming rate of sea level rise and change in temperature (ADB, 2020). According to El-Sabh & Murty (1986), human-made disasters are known as deep mining, technological use, destruction of natural vegetation, deforestation, and many more. The small and big activities result in the consequences of different forms of disasters that are often bigger than ever (Fagan, 2014). Generally, climate change consequences are slow onset in nature as their impacts do not reflect immediately; however, these incremental changes generate cumulative devastating impacts (Peduzzi, 2019). For instance, the concern of sea level rise, especially in coastal countries, may lead to the erasing of territorial boundaries and severe impacts on humans and the economy—ultimately threatening the existence of the country.

The South Asia region is a hotspot for all kinds of disasters. However, the region has a very short history of institutional setup to undertake the task of risk reduction initiatives. The institutional setup to look into DRR and CCA in South Asia was institutionalized after the adoption of the Hyogo Framework for Action (HFA), which was ten years plan (2005-2015), now recently graduated by Sendai Framework for Disaster Risk Reduction (SFDRR) 2015-2030 (Mall et al., 2019). Before the development of these international frameworks, the activities in the region were mostly Ex-Post in nature.

The development and institutionalization of DRR and CCA institutions in terms of government structure, legislation, and policies started in the region as the global efforts remained in that

direction. The approach challenged the traditionally established response-driven mechanism towards the Ex-Ante approach of reducing the potential risk. The data sharing and data partnership at the sub-national level, between the countries, sub-regional level, regional level, and national level with the use of cutting-edge technology is still yet to be established. Furthermore, in the context of a global debate on climate and disaster-induced risk and accountability is on the rise, the representation from regional and country-level governance is lacking. This can lead to a lack of collective action in mitigation and minimization agendas. In such a context, the role of diplomacy has a significant role.

1.3 Research Questions

In examining the implications and strategies of disaster diplomacy in South Asian countries, the following questions are investigated in this research:

1) What are the institutional setup for dealing with climate change and disaster risk reduction in the South Asian countries and their maturity model of disaster?
2) What is the current scenario of disaster diplomacy in South Asian countries with regards to the types, forms, and agencies providing foreign assistance and its prospects for the future?

1.4 Research Objectives

The below-mentioned objectives will strive to address the proposed research questions:

a) To analyze major legislations, institutions, and frameworks developed in South Asian countries related to DRR and CCA;
b) To study key disaster events, overtime a period of 31 years in the region and analyze the role of foreign countries and their assistance in disaster management; and

c) To develop a conceptual framework of disaster diplomacy in South Asia by analyzing the relationship between disaster and diplomacy.

1.5 Significance of the research

The South Asian region is vulnerable in terms of both disasters and climate impacts. Most of the countries are aid-dependent in the prevention or mitigation phase, during the disasters through aid and relief support, and after the disasters for the rebuilding and reconstruction. This research is carried out to understand the major disaster events from 1990 to 2021 and understand the support from foreign agencies. The time frame of 31 years was chosen as typically, at least 30 years of long-term weather pattern in an area is averaged for climate study (WMO, 2016). Hence, 31 years of timeline would allow an overview through a climate change lens while also providing a comprehensive overview of disaster over the course of more than three decades in South Asia.

Disaster events are also significant for fixing diplomatic relations between countries, and such events help countries to build their humanitarian image with direct people-to-people reach. Hence, the role of disaster diplomacy plays a vital role in such conditions to regain or initiate diplomatic talks between countries; the study critically reviews the key disaster events in relation to aid diplomacy between such countries. The role of developed countries in humanitarian support has largely been seen as their ideological influence, religious expansionism, continuing friendly relationships between countries, maintaining a balance of power, control over power and authority, and support in their agendas in the UN General assembly and global debates. The study also examines the key developed countries largely supporting the disaster events and their continuous role in all phases of disaster management. Furthermore, the significance of the study is also to see how prepared the countries are to deal with disasters and climate change issues. The study will

further study the legal and major institutional framework of both DRR and climate change perspective that is developed at the country level aligned to the agreed international framework.

1.6 Chapter Organization

The thesis is organized into five chapters starting from the introduction. This is followed by a review of the literature and conceptual framework. Then research methodology is presented. Disaster analysis and findings are presented in the next, and finally, the conclusions are provided at the end.

In the introduction chapter, background on disaster diplomacy, the research questions, objectives, and research significance have been stated. The review of the literature and conceptual framework chapter has presented a review of different facets of disaster diplomacy. The institutional setup for climate change and disaster risk reduction and the development of policies in disaster management and combating climate change in South Asian Countries have also been presented. Finally, a conceptual framework of the study has been presented. In the next chapter, the research methodology outlines the methods employed in the study and the data analysis techniques used. Likewise, ethical issues and limitations of the study have been outlined.

The disaster analysis and findings chapter first provides an outlook of disasters in South Asia from (1990-2021). This is followed by an elaboration of the impacts of disasters in South Asian Countries, forms of foreign assistance provided, and the types of foreign agencies providing assistance after a disaster. Along with this, an assessment of preparation against disaster and the maturity model of disaster in South Asian countries has been presented. Likewise, findings on the disaster management needs of South Asian countries and disaster diplomacy in the post COVID-19 scenario have been discussed. Finally, the conclusion chapter has provided concluding remarks on the study and recommendations.

CHAPTER 2 REVIEW OF LITERATURE AND CONCEPTUAL FRAMEWORK

2.1 Different facets of disaster diplomacy

Disasters cause human suffering. During such situation, people offer help and which are mostly accepted cordially. In international relations, the relations between countries determine how big or swift response they get and how big humanitarian help they receive. Therefore, in a disaster, the role of diplomacy is key.

Barston (2014) includes the major topics of changing nature of diplomacy that including cyber diplomacy, international trade and finance, the role of groups and networks—giving special attention to environmental diplomacy, and disaster and emergency diplomacy. The author on environmental diplomacy has pointed out the bilateral, regional, and global agreements on various environmental issues and the role of negotiations under three headings: (i) the key players; (ii) the process; and (iii) the form of agreements. Similarly, on disaster and emergency diplomacy, the author has highlighted the 2004 Indian Ocean tsunami as one of the largest humanitarian disasters in modern times and has also pointed out the role of information dissemination regarding the crisis, early warning systems, and the use of science and technology, role of national identity and foreign policy sensitivity, the role of international coordination—especially the role of UN institutions. The author has also pointed out, rather than traditional NGO operations, the compelled use of the military assets of external powers in disaster events. Canyon et al. (2020) report that the concept of military deployment in disaster assistance was initiated in the early 1990s. The approach of military deployment is taken as soft power diplomacy to generate goodwill towards the military, which can smooth actions towards non-humanitarian alliances, interventions, and activities. The USA military's involvement in the Indo-Pacific region through the means of disaster efforts and

humanitarian assistance is a part of the design, not by accident. The use of military power is also seen as targeted largely at politically unstable countries knowing that small disasters can lead to huge impacts and are prone to conflict.

Kelman (2012) examines the role of disaster diplomacy, highlighting the brief history of the evolution of the disaster diplomacy concept. The author describes disaster diplomacy as it examines how and why disaster-induced activities do and do not reduce conflict and induce cooperation. The author exhibits the proof that the concept of disaster diplomacy was long being studied, and it goes back to 1925, looking from the USA perspective (Kelman, 2012). Giving examples of cyclones, earthquakes, and other hazards, he also highlighted how the countries used to support each other in need. The author has also stressed the involvement of states in political affairs—especially in political unrest, civil wars, overthrowing dictatorship, and the promotion of democracy. The author has briefly presented the history of empirical evidence giving case studies of various countries, and that also includes the case studies of India-Pakistan in 2001 and 2005 and the Tsunami in Sri Lanka. Based on the hypothesis research questions, the author has analyzed disaster diplomacy in quantitative, qualitative, and no predictive models. The author has further explained diplomacy's successes, failures, spin-offs, and limitations. The book itself can be treated as an entry point to understanding disaster diplomacy.

Hannigan (2013) highlights the relief efforts and humanitarian aid initiatives in an organized manner starting from World War I and II. The author pointed out that the previous relief work was entirely focused on 'kindness of strangers' and humanitarianism from human rights—including both moral and legal claims. Hannigan also recognized that due to piggybacking climate change politics, the DRR outshined. One of the bold statements he has pointed out in his book was the poor government response to Hurricane Katrina was due to the incompetency of the officials. He

has also pointed out how cutting-edge technologies such as remote sensing and mapping of impacted disaster-prone areas can help in assessing risk for effective data-driven disaster planning. He has suggested a new framework is required that should focus more on the local community and build local capacity to prevent and address natural disasters. The author has emphasized the disordered environment in which the emerging field of international disaster politics dominates.

Albala-Bertrand (1993) sets a framework for the analysis of the social and economic impacts of natural disasters. The book will help development economists, relief agencies, and other scholars that appraise the policy implications and macroeconomics of natural disasters a command to exercise. The author has stressed that disasters are not necessarily a problem for development but are the problem of development. Furthermore, given the global case, the author has pointed out that the economic performance of the country improved after a major disaster in developing countries. Canyon et al. (2020) argue that natural disasters may promote commercial growth differently as the hydro-meteorological hazards are more destructive and impactful in both short-lived events and longer-term events. The author giving reference to the countries and regions mentioned that the high frequency of disasters experiences long-term consequences on economic growth, development work, and difficulty in minimization of poverty.

Shefner (1999) contributes to the linkage between disasters and political instability and how disaster event leads to political turmoil within the country. It outlines how failure in addressing the grievances of the people and the government's inefficiency in responding to the disaster can cause political change and involvement of the third actor. Similarly, in 2004 when a huge tsunami struck Sri Lanka, the separatist groups activated critical public and private relief goods, giving the sign regarding the functional legality of their claims over self-government (Enia, 2008). The article also suggests that the attention of the global force becomes active in the post-disaster scenarios given

a chance to get the positive and negative dynamic potential. These two examples from Shefner (1999) and Enia (2008) help to critically reflect how important it is to internally solve the issue within the country and not let outsiders get involved in such critical situations of crisis.

Schuller (2021) highlights the debate between Global North point and Global south and stresses that the conversation should not just limit to 'climate change' but to be on 'climate justice.' Stressing the emerging issues of climate change such as forest fire, displacement, hurricanes, and other climate impacts that have crumbled life of people. His argument is that the climate crisis is the outcome of white supremacy and racial capitalism. The Global North gives an example of India and China that are scaling up their economics, pointing fingers and saying, what if all seven billion start consuming like an average U.S. citizen. Knowing that the Global South is more climate vulnerable, the future is going to be a huge battle between north and south on climate injustice.

Hollis (2014) thought of managing disaster risk with the involvement of regional organizations. Bringing the regionalism perspective in disaster risk reduction, the article points out how regional organizations have emerged across the world, including SAARC, and how they established disaster management mechanisms. Natural disaster in the past has resulted in an extreme level of financial loss in some countries, whereas in some countries, the impacts have decreased. Despite the long-standing of regional organizations, DRR was recently integrated, and due to its highly different characters, the role of regional organizations also faces struggles. Mall et al. (2019) focuses on DRR and CCA initiative and focus on the role of regional organizations like SAARC. The article also focuses on regional institutional setup and initiatives to reduce risk in the region. His article also elaborates on the historical timeline of the development of major approaches, legislations, and institutions for CCA and DRR in South Asia.

Analyzing all different sources such as books, scholarly journal articles, articles, and other publications relevant to the research topic being investigated, it is found that the research carried out so far are mostly focused on the western region and not specific to the South Asia region. The existing research was more focused on DRR and CCA rather than critically viewing the elements of 'disaster diplomacy' role in the region.

2.2 Institutional setup for climate change and DRR in South Asian Countries

All the South Asian countries have institutional setup dealing with DRR and CCA. On the disaster front, all countries have separate entities for disaster management, whereas, on the climate change front, the entities are mostly integrated with other components such as the environment or forest. Pakistan is the only country with a separate ministry for climate change. The entities dealing with disasters were established earlier than those dealing with climate change. The oldest agency dealing with disaster is the Ministry of Disaster Management and Relief (MoDMR) in Bangladesh which was initially established as the Ministry of Relief and Rehabilitation. The latest one is the National Disaster Risk Reduction and Management Authority (NDRRMA) in Nepal although the Ministry of Home Affairs dealt with disaster risk management even before NDRRMA was established. Climate change aspects were incorporated into already established entities. Hence, even though the Ministry of Environment and Forest (MoEF) in India was established in 1985, it has been renamed and changed multiple times, with the renaming only done in 2014 to the Ministry of Environment and Forest and Climate Change (MoEFCC) (The Economic Times, 2014; Sondhi et al., 2021).

Various international events have shaped the development of such institutional setup along with the development of acts, policies, long term strategic action plans, amongst others (Figure 2.1).

For instance: making long-term climate adaptation measures, developing policies, and localizing best practices from different countries. The global initiatives have also significantly contributed to making an impact, from developing acts and policies to the long-term strategic action plan. For instance, IPCC establishment and subsequent publication of reports led to the adoption of UNFCCC, which has played a pivotal role in developing climate change policies. Focal entities have been designated for climate change to implement the provisions of the UNFCCC, and all South Asian countries have at least submitted one report to UNFCCC. Likewise, the Yokohama Strategy, adoption and launch of the International Strategy for Disaster Reduction (ISDR) was a precursor to the development of disaster management acts, policies, rules, or strategies in some South Asian countries (Das, 2012). At the same time, subsequent frameworks, such as the Sendai Framework for Disaster Risk Reduction 2015-2030 (2015), were responsible for ensuring policy development in others, such as Nepal, where all disaster policies were formed after 2015.

When the local level best practices and indigenous mitigation plans are not followed, it leads towards a dependency of international frameworks that are largely dominated by the western countries and their influences. At the same time, other countries are trendsetters on their merit. For instance, Japan had passed the Disaster Relief Act (Law no. 108) and Act on Provision of Disaster Relief Expenses (Law no. 82) in the 1940s, much before the international dialogues started to take precedence (LSE, 2022). Hence, the developed countries lead debates and subsequent actions, and South Asian countries have merely followed in their footsteps.

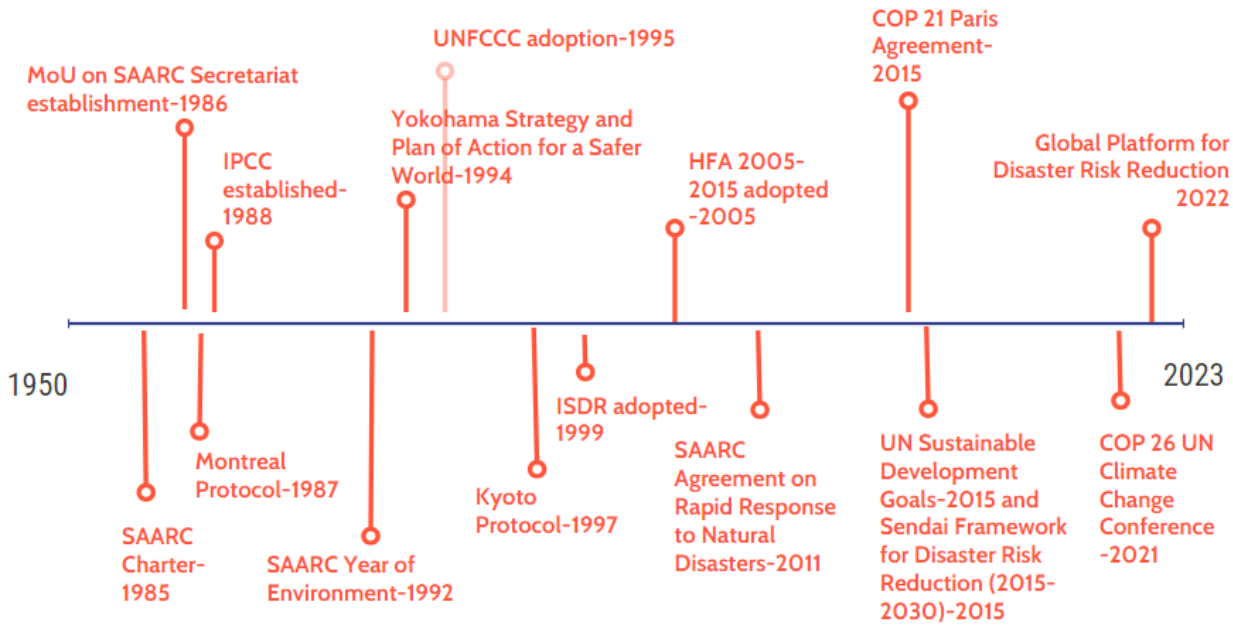

Figure 2.1: Important events in relation to the development of policies for climate change and disaster in SAARC countries (Islam & Karim, 2019; UNDRR, 2022; CFR, 2022)

2.2.1 Afghanistan

The Afghanistan National Disaster Management Authority (ANDMA), established in 1973, is the primary national entity charged with coordinating and managing all elements of disaster management and humanitarian affairs, including mine action (ANDMA, 2022; GICHD, 2022). While the National Environmental Protection Agency (NEPA), founded in 2005 as an autonomous institutional agency responsible for coordinating, monitoring, and enforcing environmental conservation and restoration laws, deals with climate change. Climate change is dealt with by a different department.

NAPA was the first climate change-related document to be prepared, whilst National Disaster Management Plan was the first disaster-related document in Afghanistan (Figure 2.2). Afghanistan

is the only country with the first climate change document being NAPA, and all other South Asian countries have prepared their first climate change document as National Communication (NC). All climate change documents in Afghanistan were made for submission to UNFCCC, and there are no national policies related to climate change, whereas, on the disaster front, several policies have been formed.

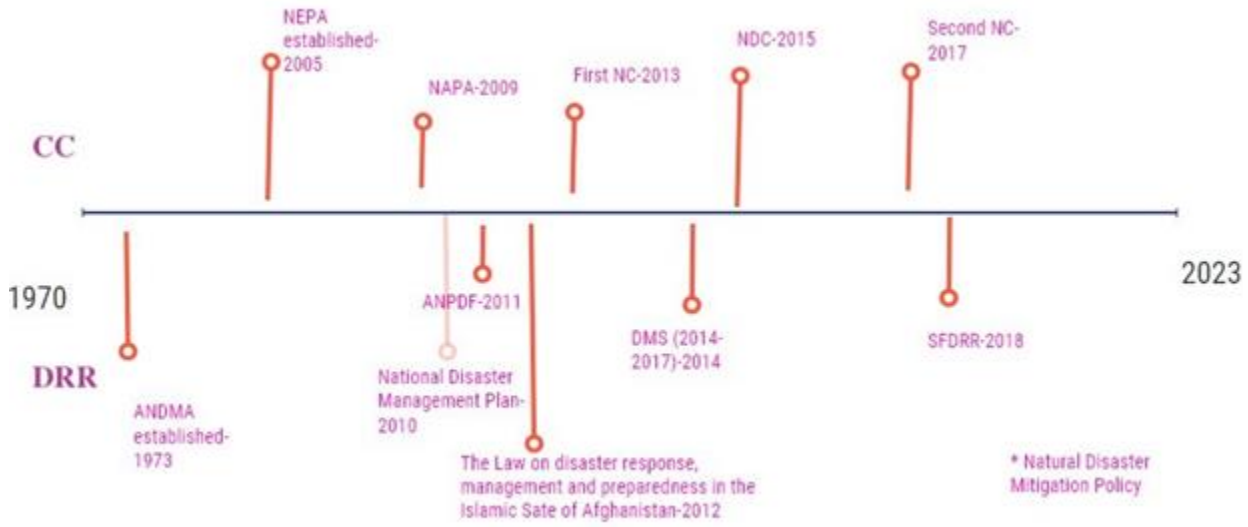

Figure 2.2: Important events in relation to the development of policies for climate change and disaster in Afghanistan (ANDMA, 2022; UNFCCC, 2022b, 2022c, 2022d)

2.2.2 **Bangladesh**

Bangladesh's Ministry of Disaster Management and Relief (MoDMR), initially established in 1972 as the Ministry of Relief and Rehabilitation, is responsible for implementing national risk reduction reforms (MoDMR, 2022). While the Ministry of Environment, Forest, and Climate Change (MoEFCC), renamed the Ministry of Environment and Forest, was formed in 1989 to ensure a sustainable environment and optimum forest coverage (Millat-e-Mustafa, 2002).

Bangladesh climate change Trust (BCCT) is a government-run organization that uses funding to address climate change-related issues.

In Bangladesh, the first climate change-related document that was prepared was the first NC, while the Disaster Management Act was the first disaster-related document to be prepared (Figure 2.3). Events related to climate change are clearly more in Bangladesh than disasters giving an impression that climate change-related issues are given more importance.

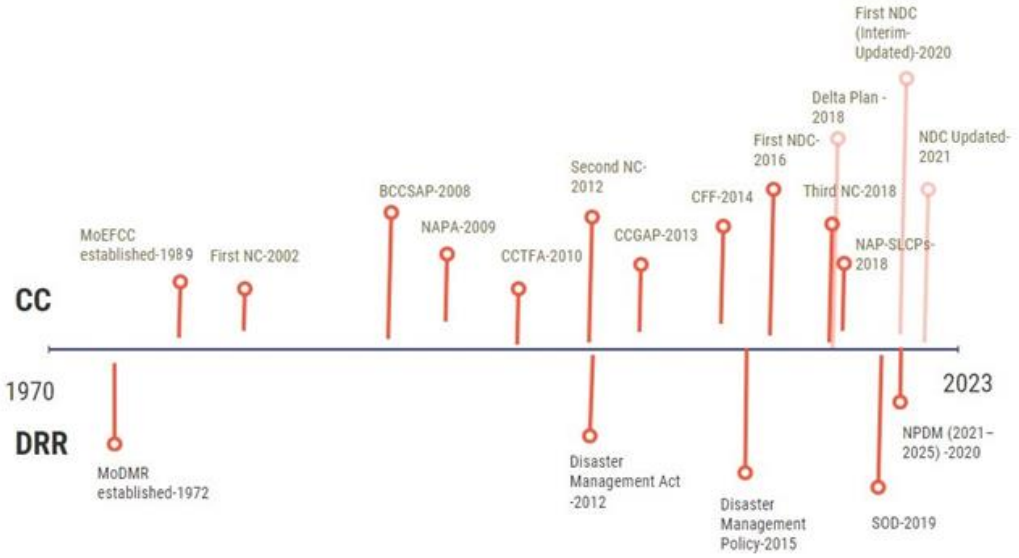

Figure 2.3: Important events in relation to the development of policies for climate change and disaster in Bangladesh (Millat-e-Mustafa, 2002; MoDMR, 2022; UNFCCC, 2022b, 2022c, 2022d)*

*The latest name of agencies is kept, such as MoDMR, as opposed to its original name Ministry of Relief and Rehabilitation.

2.2.3 **Bhutan**

In Bhutan, the Department of Disaster Management (DDM), founded in 2008 under the Ministry of Home and Cultural Affairs, is the principal coordinating agency for disaster management (DDM, 2019). In contrast, the Bhutan climate change National Environment Commission (NEC) has a climate change Division whose objective is to safeguard and promote a safe and healthy environment through bilateral and multilateral environmental agreements, negotiation, and enforcement.

In Bhutan, the first climate change document to be prepared was First NC, while the first disaster-related document to be performed was National Recovery and Re-construction Plan (NRRP) (Figure 2.4). Bhutan has much more disaster-related national documents than those related to climate change.

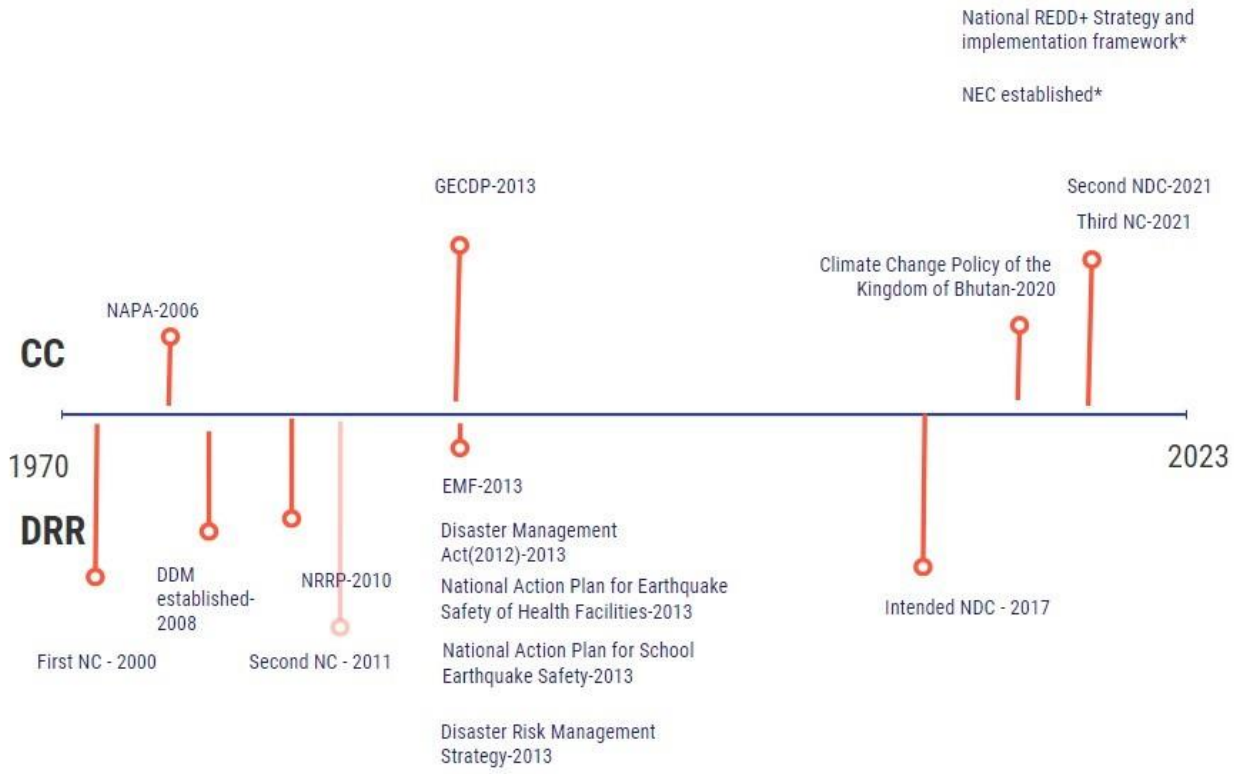

Figure 2.4: Important events in relation to the development of policies for climate change and disaster in Bhutan (DDM, 2019; UNFCCC, 2022b, 2022c, 2022d)

2.2.4 **India**

The National Disaster Management Authority (NDMA), founded in 2005, is India's apex disaster management authority (NDMA, 2022). While the Ministry of Environment, Forest and Climate Change (MoEFCC), which was founded in 1985 initially as the Ministry of Environment and Forests (MoEF), is the central body in the Central Government's administrative structure for planning, promotion, coordination, and oversight of India's environmental and forestry policies and programs (Sondhi et al., 2021). The Climate Change Division of the MoEFCC is responsible for all aspects of climate change, including international discussions as well as domestic policies and initiatives.

India’s first climate change-related document was First NC, while the first disaster-related document was Disaster Management Act (Figure 2.5). India, along with Pakistan and Sri Lanka, is not classified as Least Developed Countries (LDCs) because it does not have the mandate to submit NAPA. India and Maldives have the least number of policies related to climate change and disaster, with a total of six each.

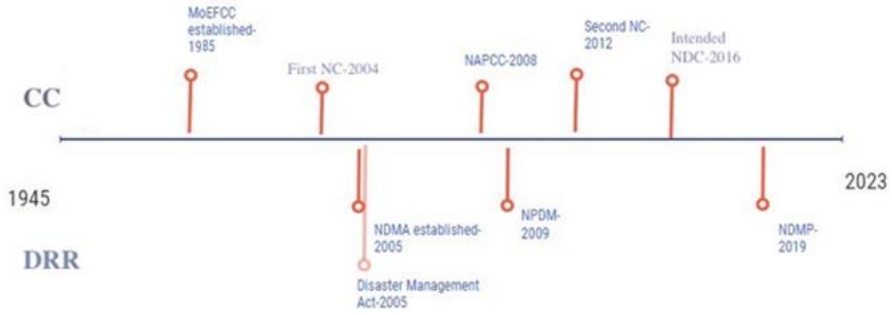

Figure 2.5: Important events in relation to the development of policies for climate change and disaster in India (NDMA, 2022; Sondhi et al., 2021; UNFCCC, 2022b, 2022c)*

*The latest name of agencies is kept, such as MoEFCC, as opposed to its original name MoEF.

2.2.5 **Maldives**

The Maldives' principal disaster agency, NDMA, was created in 2004 and focuses on emergency relief/response, disaster preparedness, and mitigation. The Ministry of Environment, climate change, and Technology (MoEnvmv), which was founded in 2006, is in charge of water and sanitation, waste management, and pollution control, as well as the environment, energy, and climate change. The climate change Department is responsible for developing policies and standards to address climate change challenges.

Maldives's first climate change-related document was NAPA, while the first disaster-related document was Disaster Management Act (Figure 2.6).

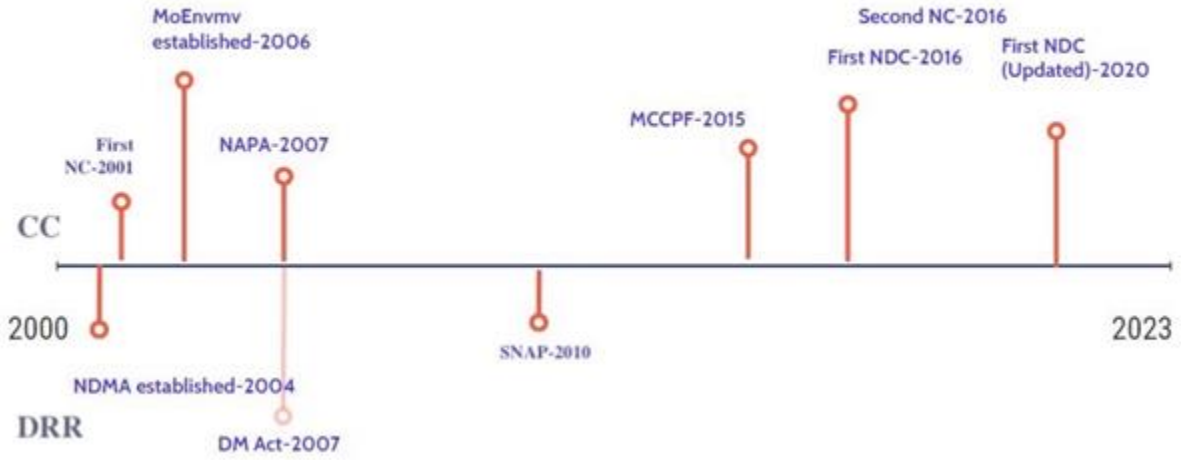

Figure 2.6: Important events in relation to the development of policies for climate change and disaster in the Maldives (UNFCCC, 2022b, 2022c, 2022d)

2.2.6 **Nepal**

In Nepal, the National Disaster Risk Reduction and Management Authority (NDRRMA), which was founded in 2019 under the Ministry of Home Affairs (MoHA), has been recognized as a separate body with responsibility for disaster risk management (MoHA, 2022a). In 1959, the Ministry of Forest was established, which had the responsibilities of forest conservation and environmental management in the country (Ranjit, 2019). While in 1995, the Ministry of Population and Environment was established with broad responsibilities for preparing and implementing policies, conducting studies, and disseminating information in addition to monitoring and evaluating the program and also serving as a focal point in the field of the environment both nationally and internationally (ADB, 1997). In 2018, the Ministry of Forest and Environment (MoFE) was formed after a subsequent merger and changes in names. The Climate

Change Management Division (CCMD), which falls under MoFE, serves as a primary climate change nodal agency (MoFE, 2022).

Nepal's first climate change-related document was NAPA, while the first disaster-related document was Disaster Risk Reduction Policy 2018 (Figure 2.7). Disaster-related events and policies were formed much later than climate change-related events in Nepal.

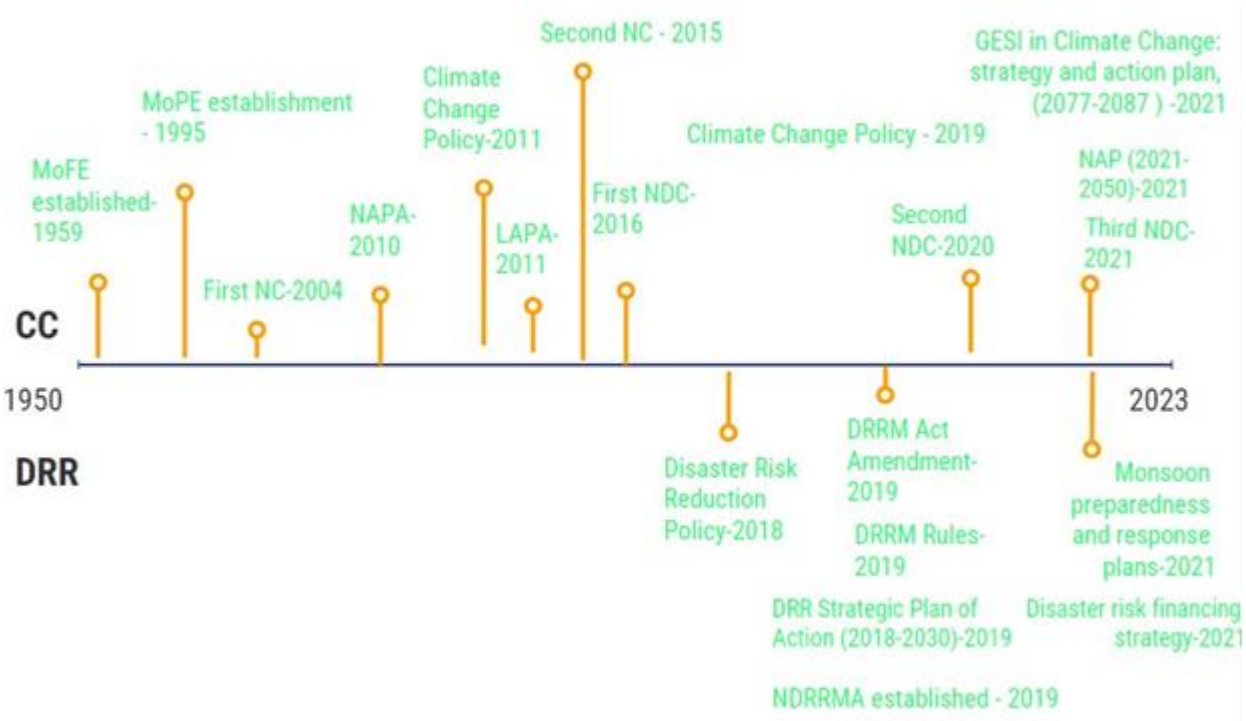

Figure 2.7: Important events in relation to development of policies for climate change and disaster in Nepal (ADB, 1997; Ranjit, 2019; UNFCCC, 2022a, 2022b, 2022c, 2022d; MoHA, 2022b)

2.2.7 **Pakistan**

In Pakistan, the National Disaster Management Authority (NDMA), which was founded in 2007, is the principal federal institution in charge of all disaster-related activities. The Ministry of Climate Change (MoCC), which was founded in 2017, strives to mainstream climate change in

economically and socially vulnerable areas of the economy and push Pakistan toward climate-resilient development (MoCC, 2021).

Pakistan's first climate change-related document was the First NC, while Earthquake Early Recovery Framework was the first disaster-related document (Figure 2.8). Pakistan has the most disaster-specific documents prepared in South Asia.

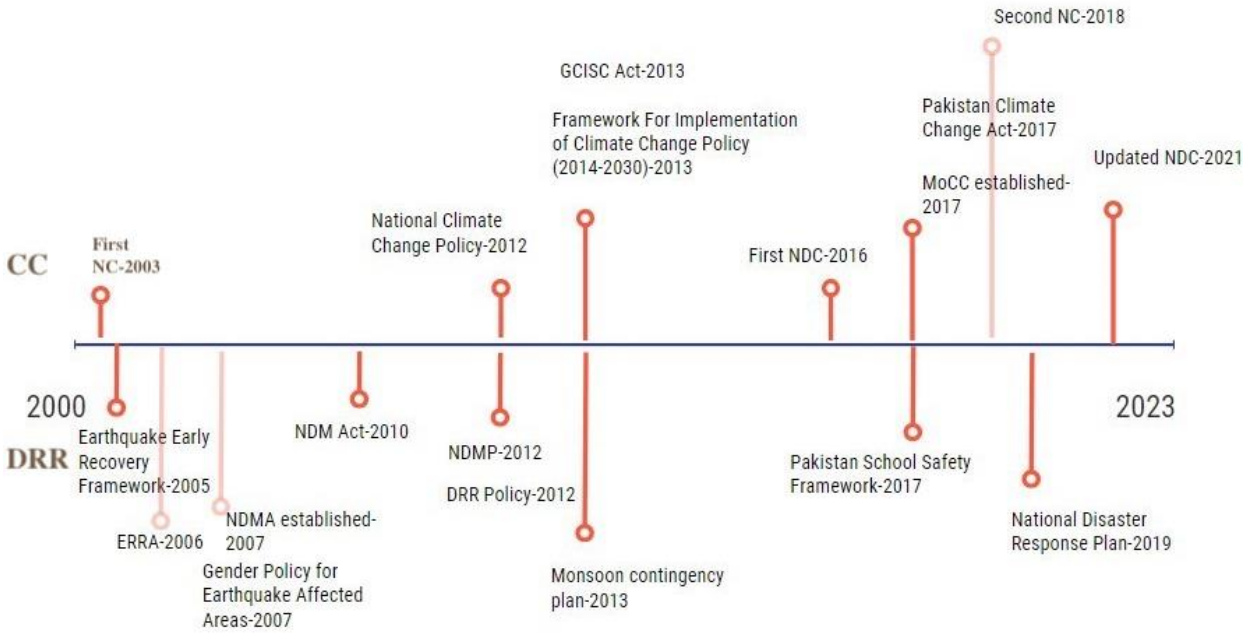

Figure 2.8: Important events in relation to the development of policies for climate change and disaster in Pakistan (DMC, 2022; UNFCCC, 2022b, 2022c)

2.2.8 **Sri Lanka**

The Disaster Management Centre (DMC), which was formed in 2005 under the Ministry of Defense, is Sri Lanka's premier disaster management institution (DMC, 2022), While the climate change Secretariat, which was established in 2008 under the Ministry of Environment, leads the country in taking comprehensive action to contribute to local, regional, and global efforts to

combat climate change, as well as incorporating unavoidable climate change scenarios into National Sustainable Development Plans.

Sri Lanka's first climate change-related document was the First NC, while Disaster Management Act was the first disaster-related document (Figure 2.9). Sri Lanka is the first country to prepare climate change-related documents in South Asia, showcased by the submission of their first NC on 6 Nov 2000. Likewise, it was also the first country to prepare a disaster-related document in South Asia with the publication of the Disaster Management Act on 13 May 2005.

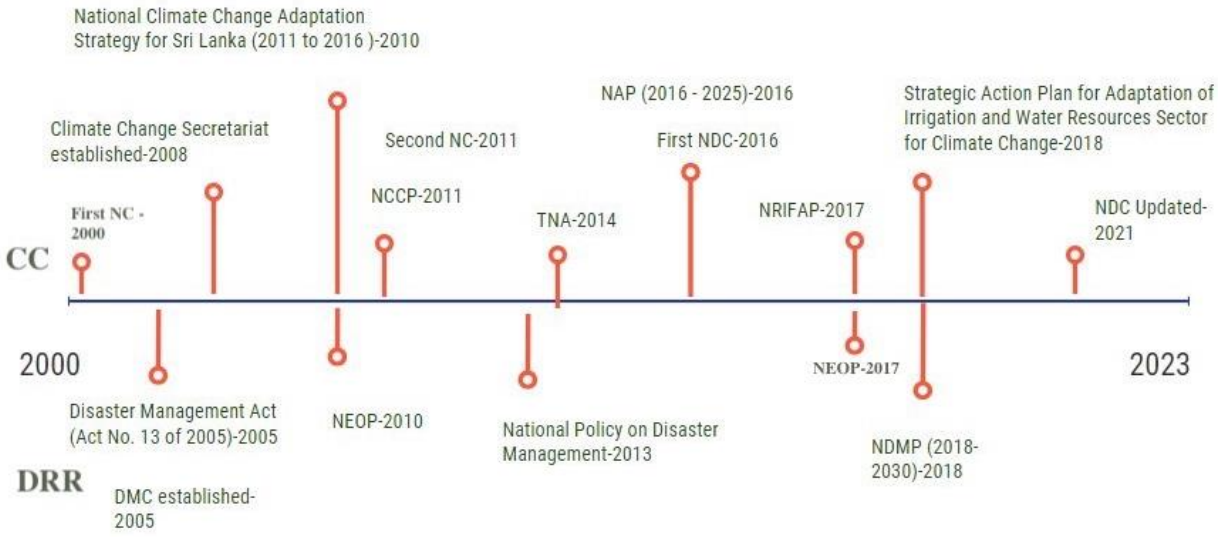

Figure 2.9: Important events in relation to development of policies for climate change and disaster in Sri Lanka (DMC, 2022; UNFCCC, 2022a, 2022b, 2022c)

2.3 Policies development in disaster management and combating climate change in South Asian Countries

Policies are essential for inducing disaster management and combating climate change. These enable initial plans into the development process and for translating them into action. These help to ensure compliance with laws and regulations and provide essential guidance for decision-

making. However, faulty policy design can make the existing situation worse. For instance, when the Government of Nepal initially imposed a one-door policy for the distribution of relief materials, it resulted in confusion and unnecessary delays in receiving relief (Melis, 2022).

This is why policy development, one that is based on an informed, inclusive, and contextualized, has been the focus of many an international mandate. The Sendai Framework for Disaster Risk Reduction 2015 – 2030, for instance, has given due importance to the use of traditional, indigenous, and local knowledge and practices, as appropriate, to complement scientific knowledge in the development and implementation of policies.

South Asian Countries have formed various policies in relation to DDR and CCA. In the DRR realm, India's Disaster Management Act was the oldest to be formulated, which was in 2005. In the climate change realm, the oldest one is the Bangladesh climate change Strategy and Action Plan formulated in 2008.

2.4 Conceptual Framework

Disaster diplomacy is relatively a new terminology but has been in practice for a long time. Hence, the research is based on the conceptual framework of analyzing, evaluating, and establishing the new framework by analyzing the primary and secondary data collected. The framework also limits the area to South Asian countries.

Support by foreign agencies is considered for policy formation and the top five disasters of the country. In the top five disasters, if support is provided by individual countries, then these are further separated into relief, aid, or both. Here relief is defined as humanitarian aid or crisis aid that is provided right after a disaster occurs, which could be in the form of food, medical support, rapid assessment, rescue, etc. In comparison, aid is the support provided by the government for

the long run, such as rehabilitation or reconstruction signified by a recipient country receiving monetary aid. Besides, a category ‘both’ has also been defined where both relief and aid have been provided by a donor country. Considering aid that has been provided in different South Asian countries during the top five disasters, the influence of donor countries is discussed. The hypothesis for the judgment is that different countries have a vested interest in providing aid to the recipient country.

A maturity model of the disaster was also developed considering four categories policy development, percent of affected, percent of death, and GDP loss. Based on the performance of each country in each of these categories, a threshold was developed for classification from immature to optimization. Such assessments enable measurements of progress made by different countries in disaster management and point to specific measures hindering progress in disaster management in each country. It was initially introduced in the field of psychology (Piaget, 1971) and later in many different fields such as software engineering, supply chain management, and humanitarian actions, among many others (Cheshmberah & Beheshtikia, 2020; Gonzalez-Feliu et al., 2020; Paulk et al., 1993). However, in the disaster, it remains to be implemented.

CHAPTER 3 RESEARCH METHODOLOGY

3.1 Research Design

The research employs a case study method and provides a case study of disaster diplomacy in South Asian countries. It uses a linear but iterative process suggested by Yin (2018). There are six steps involved in the linear process of case study research (planning, designing, preparing, collecting, analyzing, and sharing); however, the steps require a review and re-examination of former decisions. The research was planned, which involved identifying the relevant situation for undertaking the case study. Disaster diplomacy was found to be academically new and in need of more supportive documents. Then the research was designed, which involved defining the case to be studied – the study of disaster diplomacy, developing the proposition of the research – disaster diplomacy represents important diplomatic ties and a necessity for disaster management, identifying the case study design – multiple embedded (eight South Asian countries studied on the subject of policies and assistance on climate change and disaster), etc. After that research procedure was developed – studying policies for specific context and support during the most devastating disasters by foreign entities. Key informants were screened and selected with careful consideration. This was followed by data collection, which was conducted using both primary and secondary data collection. From both these approaches, the research tried to understand the readiness of South Asian Countries for disaster management and their dependency on foreign support for the same. Then, data analysis was conducted using appropriate tools. This helped obtain critical insights into disaster diplomacy in the study areas. Finally, the research outcomes were shared through the publication of this thesis. Comments and suggestions on the thesis will

be used to improve for paper publication which will have wider dissemination with the wider audience, both practitioners and the scientific community.

3.2 Research Site

The research sites include eight South Asian countries; Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, Sri Lanka, and Maldives (Figure 3.1). These are also the member states of SAARC countries. The region also has Bangladesh, Bhutan, India, and Nepal (BBIN) initiative that is also a sub-regional architecture of countries in Eastern South Asia, a sub-region of the South Asia region.

The study countries have a large difference in geography and climate and are affected by different types of disasters. The South Asian region is the most exposed in the world in terms of flooding and is also highly exposed to cyclones (The World Bank, 2012). But other disasters also wreak havoc in the region, such as Nepal is particularly prone to earthquakes.

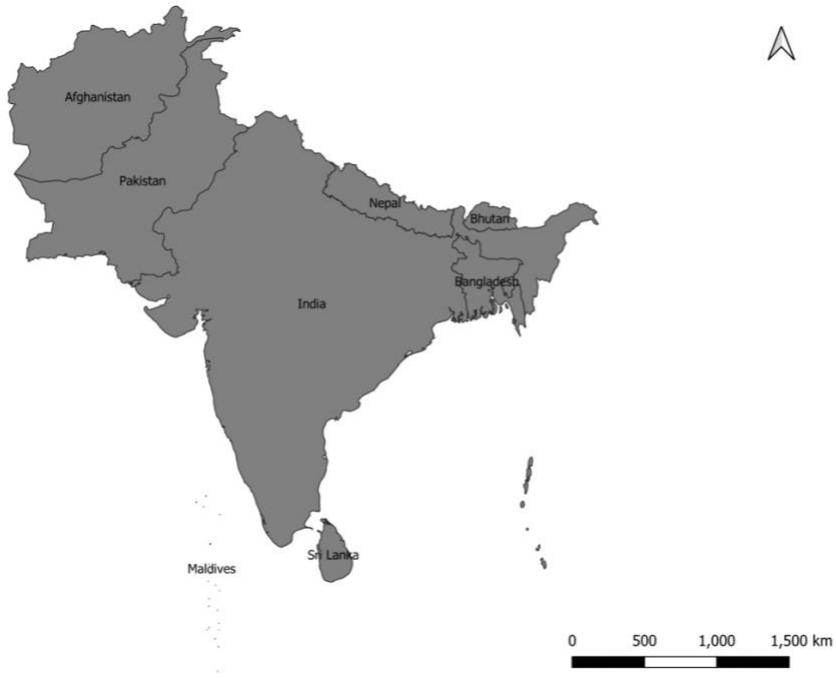

Figure 3.1 Research locations countries that lie within the South Asian region

3.3 Data Collection Methods

The research employs three forms of data collection strategy to measure the readiness for disaster management and dependency on foreign assistance in policy development and in the event of a disaster (Figure 3.2). Strategy A – identification of relevant policies and evaluation of the support provided for the development of the policies. Strategy B – in-depth desk research on the foreign assistance received during major disasters, and Strategy C – interviews with Key Informants.

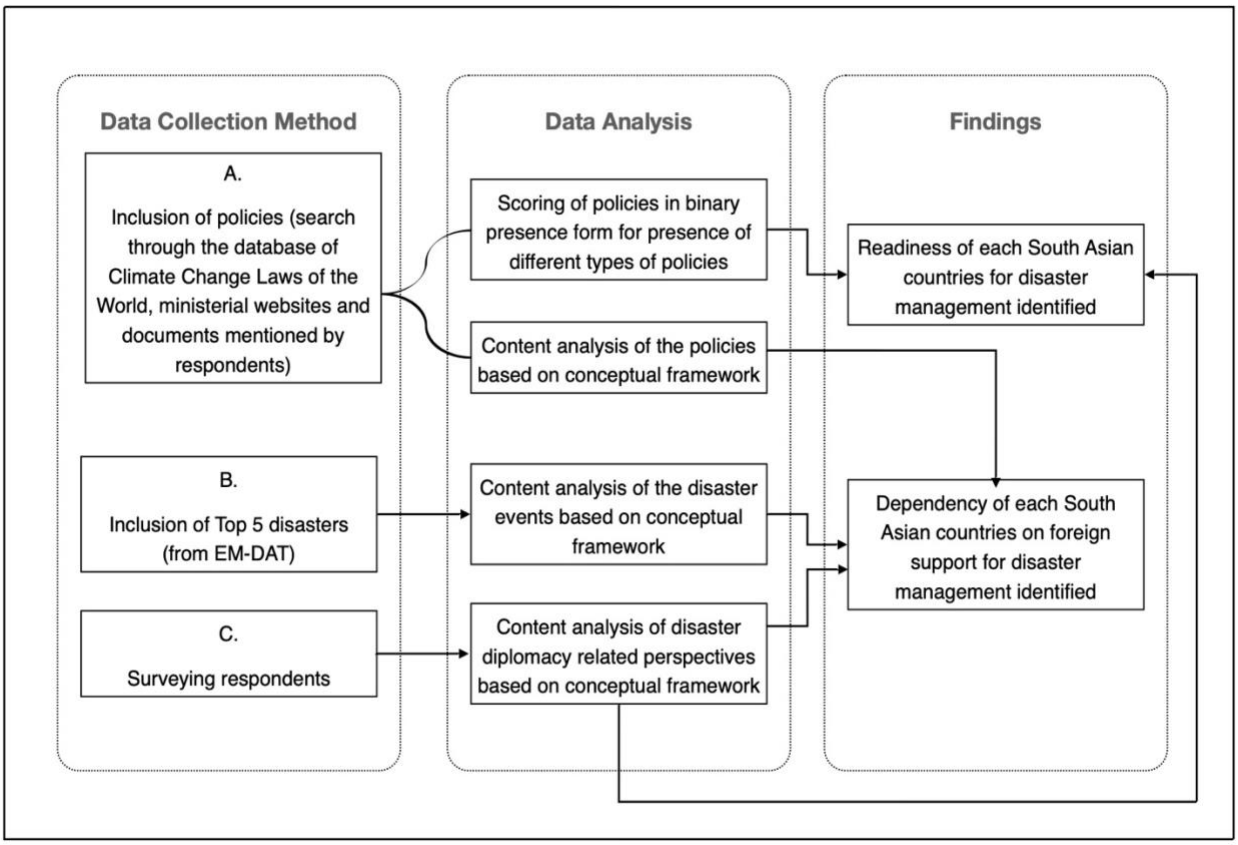

Figure 3.2: Methods of data collection and analysis

3.3.1 ***Desk Review***

The desk review consisted of a review of laws, plans, acts, policies, framework, strategies, and standing orders at the national level, along with documents submitted to UNFCCC. For ease in referring to these documents, they have been termed as policies henceforth. The policies were filtered using the search terms – "climate change," "disaster," or their derivatives used in the title or vision/aims. Additionally, documents dealing with REDD, any disaster type, or disaster phase were also added. Initially, the policies were obtained through the database of climate change Laws of the World (climate-laws.org), but it was deemed incomplete, so a list was created by rigorous search on concerned ministerial websites. The compiled list was also presented to the interviewees in case they could point out any missing policies. Reports to UNFCCC were obtained from their official sites. In case there are policies succeeding one policy or repealing the previous such as Nepal's National climate change Policy, 2019 repealing the National climate change Policy, 2011, then only the latest one was included. A total of 90 policies were collected, of which three policies were not available in the English language, and five policies were not accessible (Table 3.1, Annex 1 and 2). Hence, 82 policies were analyzed for marking assistance.

Table 3.1: Policies review from each study country under categories of climate change, disaster, and report to UNFCCC. In Maldives's case, there is a national plan dealing with both disaster and climate change. To avoid double counting, it has been mentioned as a disaster document.

Category	**Afghanistan**	**Bangladesh**	**Bhutan**	**India**	**Maldives**	**Nepal**	**Pakistan**	**Sri Lanka**	**Total**
Climate Change		7	3	1	1	4	4	5	**26**
Disaster	6	4	7	3	2	6	9	4	**41**

Report to UNFCCC	3	3	3	2	3	4	2	3	**23**
Total	**9**	**14**	**13**	**6**	**6**	**15**	**15**	**12**	**90**

From the policies compiled, a list of foreign supporting agencies for the formation of policies was obtained. These were broadly classified into completely self-funded or foreign assistance obtained. If foreign assistance were obtained, then a further classification into funding by i) UN agencies, ii) Consortium, Regional or other international bodies, and iii) Individual countries were made. If support was provided by an individual country, then they were named as well and further separated into relief, aid, or both.

To attribute the contribution made, the documents were searched using the terms 'acknowledgment', 'support,' 'logistic,' 'management,' 'prepared,' 'guided,' 'input,' or their derivates. The use of different organizations' logos in the document (such as the use of Global Adaptation Center, Climate Vulnerable Forum, etc., in the Mujib Climate Prosperity Plan (see figure 3.3) was also considered foreign support.

a. b.

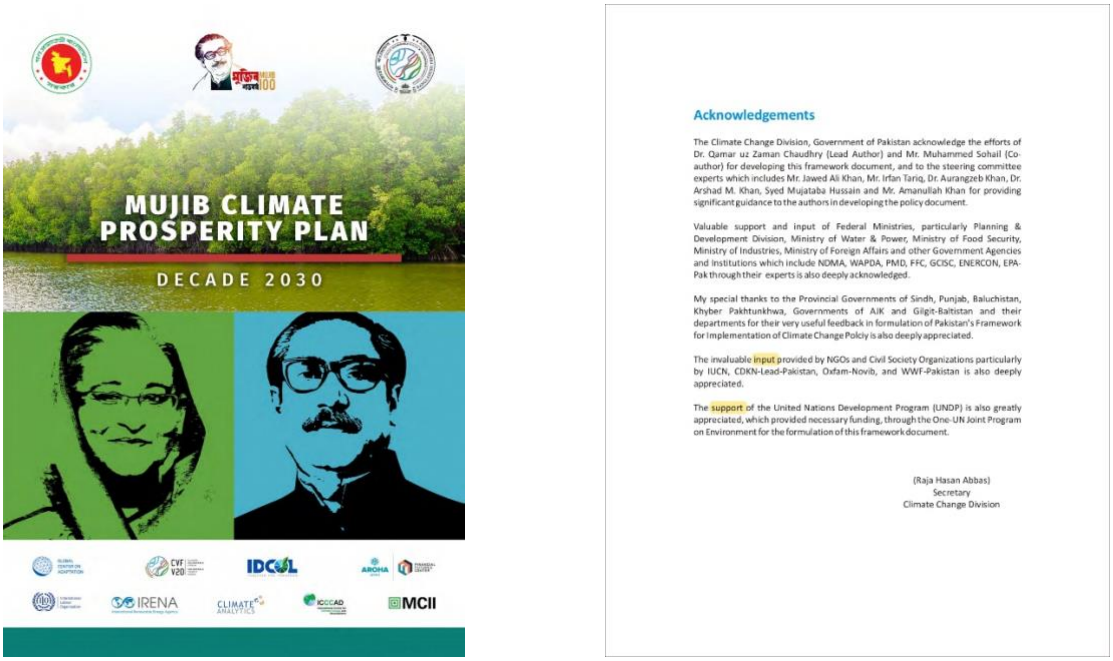

Figure 3.3: Example of foreign support considered in policies. A. Use of other organization logo in Mujib Climate Prosperity Plan of Pakistan considered supporter in the development of the plan. B. Attribution of Search Term "support" and "input" corresponding to foreign entities in the Framework for Implementation of climate change Policy (2014-2030) considered supported in the development of the framework.

Likewise, a list of top five natural disasters per country based on total deaths was compiled from the EM-DAT database (https://www.emdat.be/) from the year 1990-2021, excluding epidemics (Annex 3 – list of top five disasters per country). For the Maldives, only two disaster events had records of deaths; hence, the top five disaster list for the Maldives was created by taking the weightage of total deaths and total affected. The weightage is done with the normalization of total deaths (converted to 0-1) and total affected (converted to 0-1) and then added together to form a weighted sum.

As put forward by Kelman (2012), disasters are not natural but social constructions. Even UNISDR's (2004, 2009) terminology of basic disaster-risk reduction terms has not included natural disasters. The term disaster in disaster diplomacy is also restrictive in that it carries an implication of activities conducted after a disaster which is clearly not the case. Many disaster management activities occur before a disaster, such as funding for flood embankments. Hence, disaster diplomacy is expanded to examine the role of disaster-related activities in all forms of disasters, and this study has been limited to international affairs and international relations.

Based on the top five disasters, questionnaires were prepared. The questionnaire consisted of five broad categories, which included:

a) Funding agency for policies (asked only if the policies did not mention it clearly)–either completely self-funded or foreign. If foreign assistance were obtained, then a further classification into funding entities as done in the development of policies made.
b) Foreign Funding agencies after each top five disasters, classification as before.
c) Types of foreign support after each top five disasters (directly attributed to the disaster)– i) financial (monetary aid), ii) in-kind (support other than money such as donated goods, services, or volunteer work), iii) technical (conducting assessments and evaluation, formation of policies, technological support, and alike), iv) Loans v) Other support
d) Mode of foreign support - i) Need basis ii) early recovery, iii) long-term support
e) Foreign Support after a disaster (disaster response and recovery)

The answers to these questions were rigorously searched through the use of websites – Relief Web (https://reliefweb.int/), situation reports of the disasters, and a general search on the web using a combination of the search terms: Country + disaster event (such as the earthquake of 26 December

2004 or their common names such as Boxing Day Tsunami or the Sumatra–Andaman earthquake) + aid/loan/policy development.

3.3.2 ***Key Informant Survey***

Two types of Key Informant Surveys (KIS) were employed. The first one involved supplementing the desk survey, while the second involved deploying perspective-based questionnaires or perception surveys on disaster diplomacy. The survey forms were developed and dispatched to all South Asian study countries targeting DRR experts, practitioners, foreign affairs professionals, and alike through the SurveyMonkey platform (https://www.surveymonkey.com/) (Annex 4). They were identified by google searches, personal networks, and from a referral by interviewees.

The supplement over the desk survey includes:

- Make sure the policies list compiled was complete by asking the Key Informants to list if anything was missing.
- Request for sharing policies that were inaccessible and policies not in English (eight such policies were requested.) However, a reply was only received from Afghanistan.

Likewise, the perspective questions dealt with views from experts on disaster budget, measures taken by countries to combat the impacts caused by the increasing frequency and/or intensity of natural hazards due to climate change, types of disaster assistance most required by countries, transparency and accountability in utilizing aids, views on the diplomatic ties established through the aid, need for cooperation and coordination amongst others (Annex 1). This supplements the present research with regards to obtaining perspectives on how aid and support are viewed by the different countries.

Sixty-six people were surveyed in such manner, with representation from government bodies around 18 percent,IGOs/NGOs/INGOs/Civil Society around 28 percent University/Research/Private Sector around 50 percent, and the remaining under others.

3.4 Data Analysis Methods

On the basis of data obtained from the number of policies, a matrix was created ranging from a score of 0 to 5 for both climate change and disaster. The score was given in a binary form 1 each for the presence of an act, policy, strategy or action plan, and other policies (standing order, law, etc.). Additionally, for disaster policies dealing with any specific disaster (such as earthquake-specific action plan) or investment or funding schemes, these were also given a score of 1. And if climate policies dealt with investment or funding schemes, there were also given a score of 1. Policies that were both active and dealt with funding schemes, such as Bangladesh's climate change Trust Fund Act, 2010 then, were counted as the act to avoid double counting. Hence, the total score for either disaster or climate change can range from 0-5. Based on this score a classification was made with 0 = no readiness, 1 to 2 = low readiness, 3 = medium readiness and 4 to 5 = High readiness. This helped to obtain a readiness score per country. For this analysis, UNFCCC documents were not considered as documents such as National Adaptation Programmes of Action (NAPAs) do not need to be formed by all signatory countries. NAPAs provide a process for LDCs to identify priority activities for responding to the urgent and immediate needs for climate change adaptation based on Decision 28/CP.7 of Guidelines for the preparation of national adaptation programs of action (UNFCCC, 2002). No matter the availability of policies in the English language or accessibility, as long as titles were available, the classification was made.

Analysis of perception surveys was conducted in PivotTable of excel. From where the percent of count in response was obtained. Likewise, on the dependency front, the percent of foreign dependency was obtained on account of support for the formation of policies. The identification of notable funding agencies per top five disasters, types of support provided, mode of support, and types of support before and after a disaster was made. These datasets were visualized through Microsoft's excel sheet, Adobe's illustrator, and through Python packages such as NumPy and Pandas. ArcGIS was used to visualize maps.

A maturity model for assessing disaster operations keeping foreign assistance in mind was designed based on four criteria (Table 3.2) which are:

- Policies in place: Derived from binary coding of the presence of policies as mentioned above for both disaster and CC. It can range from a minimum of 0 to and maximum of 10.
- Percent of the total affected: Difference of total affected from 1990-2005 and totally affected from 2006-2021 per total affected from 1990-2005 such that:

$$percent\ of\ total\ affected = \left(\frac{(Total\ affected\ from\ 1990\ to\ 2005 - Total\ affected\ from\ 2006\ to\ 2021)}{Total\ affected\ from\ 1990\ to\ 2005}\right.$$

- Percent of total deaths: Difference between total deaths from 1990-2005 and total deaths from 2006-2021 per total deaths from 1990-2005 such that:

$$percent\ of\ total\ deaths = \left(\frac{(Total\ deaths\ from\ 1990\ to\ 2005 - Total\ deaths\ from\ 2006\ to\ 2021)}{Total\ deaths\ from\ 1990\ to\ 2005}\right.$$

- Effect on GDP: Percent of GDP of 2020 that is impacted by the damage induced by disaster from 1990-2021. The GDP of South Asian countries in 2020 has been provided as compiled by World Bank (https://data.worldbank.org/indicator/NY.GDP.MKTP.CD).

Table 3.2: Maturity model scoring for assessing disaster operations

Scores	**Policies development**	**Percent Affected**	**Percent Death**	**GDP loss**
<=1	≤ 2	>500 percent increase	Increase	>10 percent
>1 to =2	>2 to 4	100-500 percent increase	30 percent decrease	5-10 percent
>2 to =3	>4 to 6	Up to 100 percent increase till 25 percent decrease	Up to 60 percent decrease	1-5 percent
>3 to =4	>6 to 8	Up to 75 percent decrease	Up to 90 percent decrease	0.1-1 percent
>4 to 5	>8 to 10	>75 percent decrease	>90 percent decrease	<0.1 percent

The score so obtained per country was averaged. Finally, a maturity model classification was made (adapted from Gonzalez-Feliu et al., 2020):

- ***Immature:*** This stage is marred with an almost complete lack of a DRRM system brought about by very little policy development, a large increase in the percent of affected, a large increase in the percent of death, and disasters greatly contributing to a loss in GDP. An average score of 0 to <1 in the maturity model contributes to this classification.

- ***Context awareness:*** This stage consists of little awareness of the DRRM system. An average score of 1 to <2 in the maturity model contributes to this classification.
- ***System discipline:*** This stage consists of moderate awareness of the DRRM system. An average score of 2 to <3 in the maturity model contributes to this classification.
- ***System integration:*** This stage consists of high awareness of the DRRM system. An average score of 3 to <4 in the maturity model contributes to this classification.
- ***Optimization:*** This stage consists of almost perfecting the DRRM system in place. An average score of 4 to 5 in the maturity model contributes to this classification.

3.5 Limitations/ Delimitations

3.6 The research bears some limitations/delimitations because of use of lack of prior research, prior approved methods, and a complete database on disasters, among other reasons. Disaster diplomacy, especially in the South Asian context, has not been a topic of research previously. Hence, there is a distinct lack of related books, scholarly research, or peer-reviewed articles on 'disaster diplomacy' focused on the South Asian region, which has limited the adoption of the prior standardized method. Likewise, there was a necessity to limit the number of policies for review, which led to the selection of policies bearing particular words and phrasing only. Similarly, South Asian countries are truly diverse with many local languages. However, the lack of fluency in the local language of other countries has some impact on the quality of the data and information. Particularly, policies written in non-English language had to be excluded. Besides, the EM-DAT database has been used in the study, which does not include the indirect cost of disaster, nor is it completely comprehensive. EM-DAT database contains many blank values in total affected and total damages per disaster, which prevent overall visualization of disaster impact. Moreover, the lack of aggregated damage and loss and loss and damage information, disaster and climate change-related documents, and disaster support-related fund transparency in an open data platform has also limited the extent of the research. The research is also concerned with country-level readiness and dependency and not with the interrelation, diplomacy, or dynamics among countries. For instance, in the 2004 Indian Ocean tsunami, many countries were hard hit, but the research here looks into how each of the countries received aid and assistance and not on the regional scale.

3.7 Ethical Concerns

To meet the ethical principles and underline the research attempt, Jaap Bos's four key things were followed, i.e., perspectives; ethics and misconduct; ethics and trust; and forms, codes, and types

of regulations (Bos, 2020). Under perspectives, the research's fundamental theories and code of conduct were understood and adopted. On the ethics and misconduct front, plagiarism, fabricating or cheating, or falsifying were completely avoided. On the ethics and trust front, confidentiality, conflict of interest, science, and university policies were studied and followed. And on forms, codes, and types of regulations front, establishing informed consent, analyzing research findings, managing data and promoting its safe storage, followed by reporting and dissemination of research findings were conducted.

CHAPTER 4 DISASTER ANALYSIS AND FINDINGS

4.1 Analysis of the Study

4.1.1 *South Asia Disaster Outlook 1990-2021 based on EM-DAT's database*

A total of 1,179 disasters have occurred in the South Asian study countries from 1990-2021, excluding epidemics (Table 4.1). The disasters that have occurred in the South Asian Countries from 1990-2021 include drought, earthquake, extreme temperature, flood, glacial lake outburst, insect infestation, landslide, mass movement (dry), storm, and wildfire (Figure 4.1). The highest occurrence of disaster is in India, comprising more than 38 percent of the total disaster count. Flood is the most common disaster in the region, comprising almost 50 percent of total occurrence. Glacial lake outburst is the least occurring disaster in the region, with less than one percent of the occurrence. The year 2005 had the highest occurrence of a disaster.

Table 4.1: Some disaster statistics in South Asian Countries (1990-2021). Data Source: EM-DAT (https://www.emdat.be)

Country	**Total disasters**	**Most common disasters**	**Year of a most common disaster**
Afghanistan	167	Flood	2005 and 2006
Bangladesh	212	Storm	1999, 2000, and 2005
Bhutan	10	Flood	1994, 2009, and 2021
India	452	Flood	2005

Maldives	5	Flood and storm	1991, 2004, 2007, 2019, and 2021
Nepal	79	Flood	2011
Pakistan	173	Flood	2019
Sri Lanka	81	Flood	2014

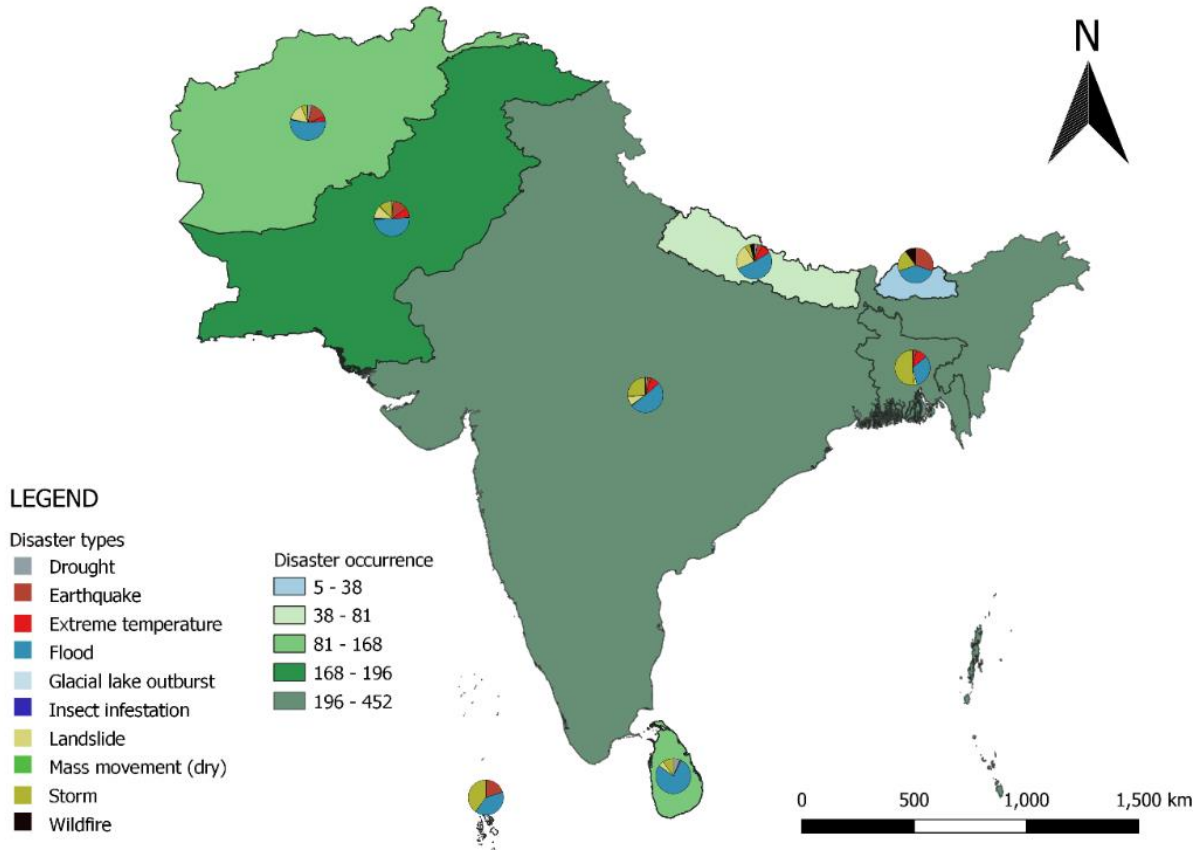

Figure 4.1: Types of disasters in different South Asian Countries from 1990-2021, excluding epidemics. Data Source: EM-DAT (https://www.emdat.be)

4.1.2 *Impact of Disaster in South Asian Countries based on EM-DAT's database*

More than 46,000 deaths with more than 1.7 billion people affected, and more than 228 million USD of total damages (adjusted) have been noted because of disasters in the South Asian countries between 1990-2021 (Details in Table 4.2).

Global climate risk index 9 (https://www.germanwatch.org/en/cri) for 2000–2019 has ranked different South Asian countries from 7 to 174, making the highest affected India and least affected Maldives (Eckstein et al., 2021). Likewise, Inform Risk Index

(https://drmkc.jrc.ec.europa.eu/inform-index) has ranked the countries in South Asia from 3 to 140, making Afghanistan the most at risk and Maldives the least at risk.

Table 4.2: Impact of natural disaster (as classified by EM-DAT) in South Asian Countries from 1990-2021, excluding epidemics.

Countries	Total Damages, Adjusted ('000 USD)	Total Deaths	Total Affected	Global Climate Risk (2000-2019)	INFORM Risk Index 2022
Afghanistan	354017	18231	33154571	17	3
Bangladesh	24743752	157743	203126821	7	27
Bhutan	5438	273	87130	105	111
India	154978904	131956	1421517569	20	38
Maldives	701149	102	55832	174	140
Nepal	7121007	16420	11828814	10	44
Pakistan	34991857	91859	83372354	8	22
Sri Lanka	5267128	37225	20932444	23	95

Source: Total Damages, Deaths, and Affected from EM-DAT (https://www.emdat.be), Global Climate Risk from (Eckstein et al., 2021), and INFORM Risk Index (INFORM, 2021)

4.1.3 *Forms of foreign assistance after a disaster*

In the top five disasters per country from 1990-2021, financial, in-kind, technical, and loans were provided as foreign support. The highest form of support would be in the form of technical support provided in 82.5 percent of these disasters. Financial and in-kind support are the second most

provided supported provided in 80 percent of disasters. Loans, however, have only been provided in 37.5 percent of disasters (EM-DAT, 2021).

Afghanistan has received in-kind and technical support in all its top five disasters, with financial support provided in four of the five disasters. Loans have not been issued in any of these disasters. Bangladesh has received all forms of support with financial, in-kind, and technical support provided in all of the top five disasters and loans supplied in four of the five disasters. In Bhutan, financial, in-kind, and technical support have been received in two of the top five disasters, with loans issued in one. In the case of India, financial, in-kind, and technical support have been received in four disasters, and loans have been published in two disasters. In Maldives' case, the most prevalent form of assistance is in financial condition, provided in four disasters, and in-kind, technical, and loans provided in three of the five disasters. In Nepal, in-kind and technical support have been provided in all five disasters, with the financial backing in four of these disasters and loans issued in one. In Pakistan, in all five disasters, financial support has been provided, in-kind and technical support has been provided in four disasters, and loans have been issued in three. Likewise, in Sri Lanka's case, technical support has been provided in all disasters, with financial and in-kind support given in four and loans issued in one disaster.

The majority of the support after the disaster has been provided on a need basis, followed by early recovery and then long-term recovery. Need basis support has been provided for 85 percent of the top five disasters, early recovery support has been provided in 65 percent of disasters, and long-term recovery has been provided for less than 50 percent of disasters. There were only three events when no disaster support was obtained. These include the Flood of 6 October 1994 in Bhutan; the Storm of May 1994 in Bhutan; and the Storm of 16 May 2021 in the Maldives (EM-DAT, 2021).

4.1.4 *Foreign agencies providing assistance after a disaster*

The majority of the support has come through UN agencies, with support provided in 80 percent of disasters, followed by support through consortiums in 72.5 percent of disasters and individual countries in 65 percent of disasters. In total, 95 countries have provided assistance during the top five disasters in South Asia. Overall, the USA has provided the most assistance, providing assistance during 17 of the 40 disasters, followed by Japan assisting in 16, and Australia assisting in 15 disasters. Within the South Asian countries themselves, India has provided the highest aid with assistance provided in 11 disasters.

However, specifically talking about aid, Australia has provided the most aid, providing aid during 10 of the 40 disasters, followed by Denmark, aiding in nine, and Norway aiding in eight disasters. Likewise, with regards to relief provision, Pakistan has provided the most relief, providing relief in eight disasters, followed by Russia, providing relief in seven disasters, and then India and Iran, each providing relief in five disasters. Now, with regards to providing both aid and relief, the USA stands at the top, providing both aid and relief in 12 disasters, followed by Japan, providing both aid and relief in seven disasters, and then India, Switzerland, and the UK providing both aid and relief in six disasters each.

Bangladesh, India, and Sri Lanka are the highest recipients of disaster assistance, having received assistance in four of the five disasters. Pakistan has received aid from 46 countries in its top five disasters, followed by India, which has received aid from 40 countries, and then Nepal, having received aid from 27 countries. Likewise, the highest relief receiving country is Nepal, having received relief from 31 countries, followed by Pakistan, having received relief from 29 countries, and then Sri Lanka, with 22 countries providing relief. Pakistan is again the highest recipient of both aid and relief, having received it from 37 countries, followed by Nepal, receiving both aid

and relief in 26 countries, and then Bangladesh receiving both aid and relief from 21 countries. However, the prominence of different donors in providing aid, relief, or both differs in different South Asian countries (Table 4.3)

Table 4.3: Highest assistance providing donor countries in South Asia (provided per number of disasters, not amount)

Country	**Aid provider**	**Relief provider**	**Both aid and relief provider**
Afghanistan	USA	Russia	Norway
Bangladesh	Ireland and Sweden	no prominence	Japan and USA
Bhutan	Japan		
India	Australia	no prominence	Switzerland and USA
Maldives	no prominence	no prominence	no prominence
Nepal	Denmark		Sweden, UK, USA
Pakistan	Denmark, Nepal, New Zealand, and Norway	Indonesia, Iran, Jordan, Russia, Tunisia	Australia, Canada, China, France, India, Japan, Saudi Arabia, Turkey, UAE, UK, USA
Sri Lanka	Australia	India, Japan, and Pakistan	USA

The perception surveys reveal that in Afghanistan, India, and Pakistan, transparency was opined to be opaque. Afghanistan is especially in need of assistance, but negative perceptions regarding the use of foreign assistance for disasters could weaken general trust in disaster management (Figure 4.2). Likewise, 57 percent believe that foreign countries providing disaster assistance to the country are also seeking other diplomatic ties.

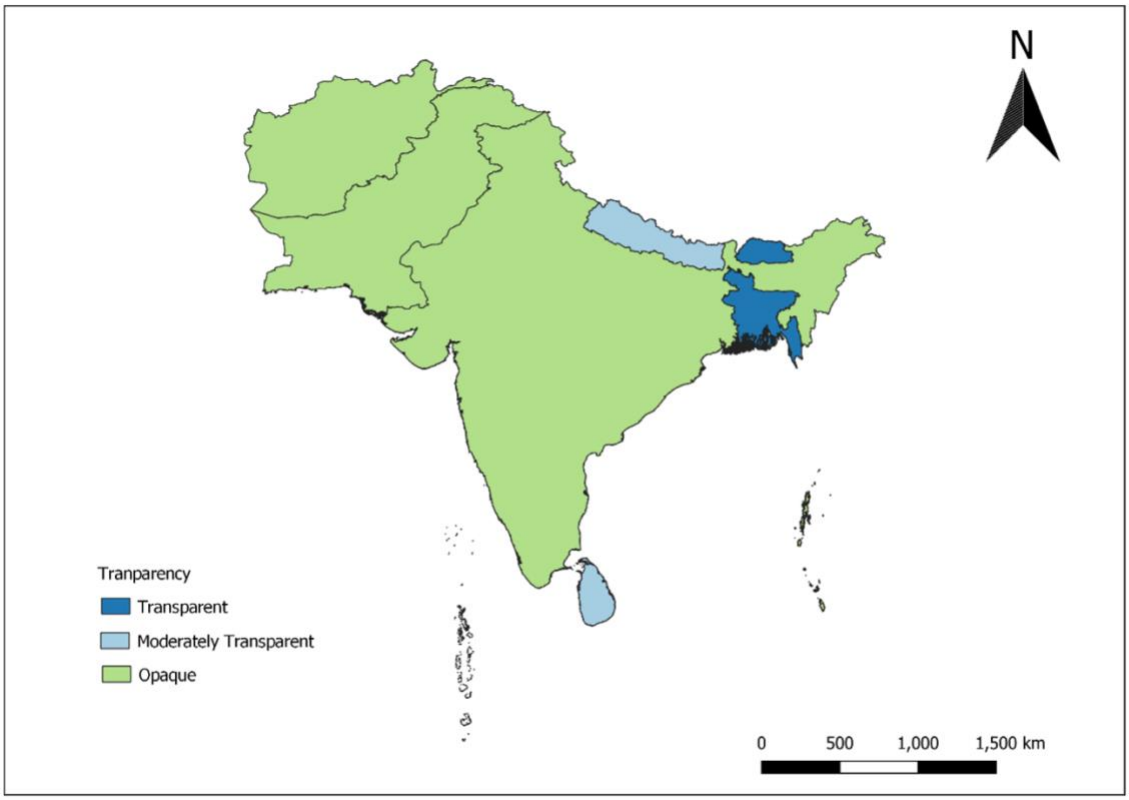

Figure 4.2: Transparency perception in different South Asian Countries

Most have expressed that only a moderate degree of accountability of foreign assistance during disaster events has been practiced (almost 50 percent expressing it). Ninety-seven percent believe that cooperation and coordination amongst countries are necessary for transboundary disaster management and with the capacity building being the prime form, followed by data sharing, financial support, and others.

4.1.5 How prepared are South Asian Countries: Assessing Act, Policies, and International Support

Readiness

Out of the eight South Asian countries, Afghanistan showcased no readiness in terms of climate policies. At the moment, there are no policies related to climate change in Afghanistan, and given the turmoil in the security process, the development of such policies has no near sight of

completion. Bhutan, India, and the Maldives have exhibited low readiness, with Bangladesh, India, and Pakistan exhibiting medium readiness for climate change in terms of policy development. Nepal has showcased high readiness for climate change in terms of policy development. Likewise, Maldives has shown low readiness for the development of policies for disaster risk reduction. India and Sri Lanka have shown medium readiness, whereas the rest have shown high readiness for disaster risk management.

Dependency

Out of the 80 policies studied in reference to development assistance, only about 36 percent are completely self-funded. The highest dependency was seen in Afghanistan, with all of its policies developed and supported by foreign agencies. Likewise, in India, 100 percent of its policies are self-developed.

India and Nepal have instances where foreign assistants were rejected. With reference to India, the rejection at the time of COVID-19 was called unjustified as at the time when the country was reeling under an increasing number of deaths and worst cases of COVID-19, accepting international aid may have fast-tracked the supply-chain process for several states. In Nepal's case, the rejection was justified as the rejection related to religious items or expired or unsuitable items for a particular disaster.

Right now, the most frequent measure taken to mitigate the impacts caused by the increasing frequency and/or intensity of disasters and climate change is opined to be understanding risk/managing risk (Figure 4.3). In contrast, the most frequent foreign support that has been provided in DRRM and the climate change sector has been opined to be emergency relief (Figure 4.4).

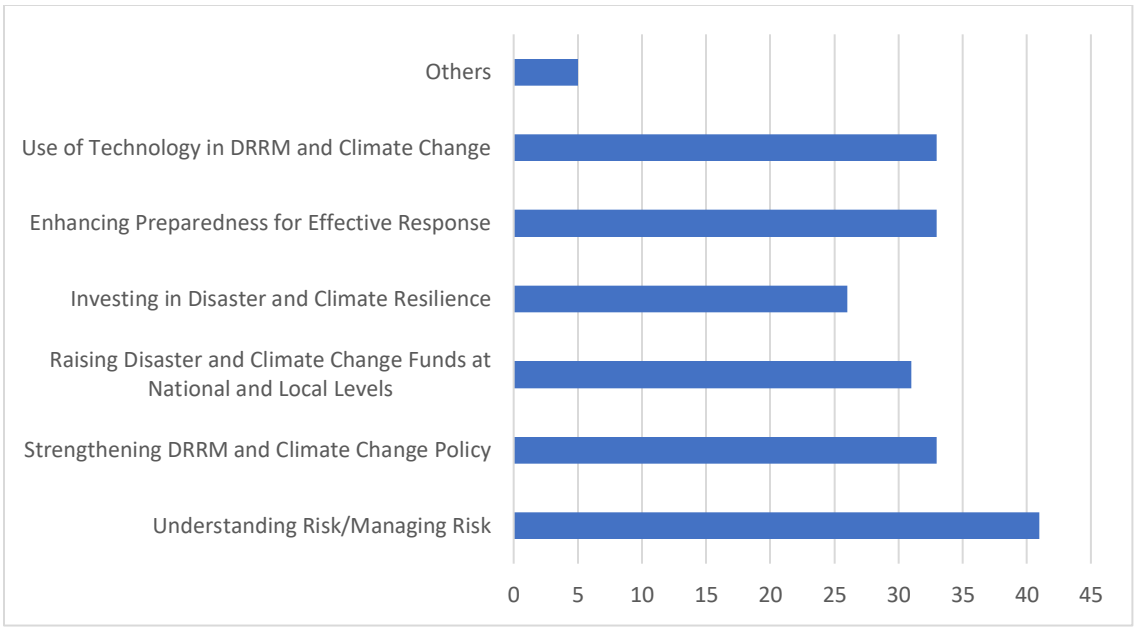

Figure 4.3: The measures been taken to mitigate the impacts caused by the increasing frequency and/or intensity of disasters and climate change

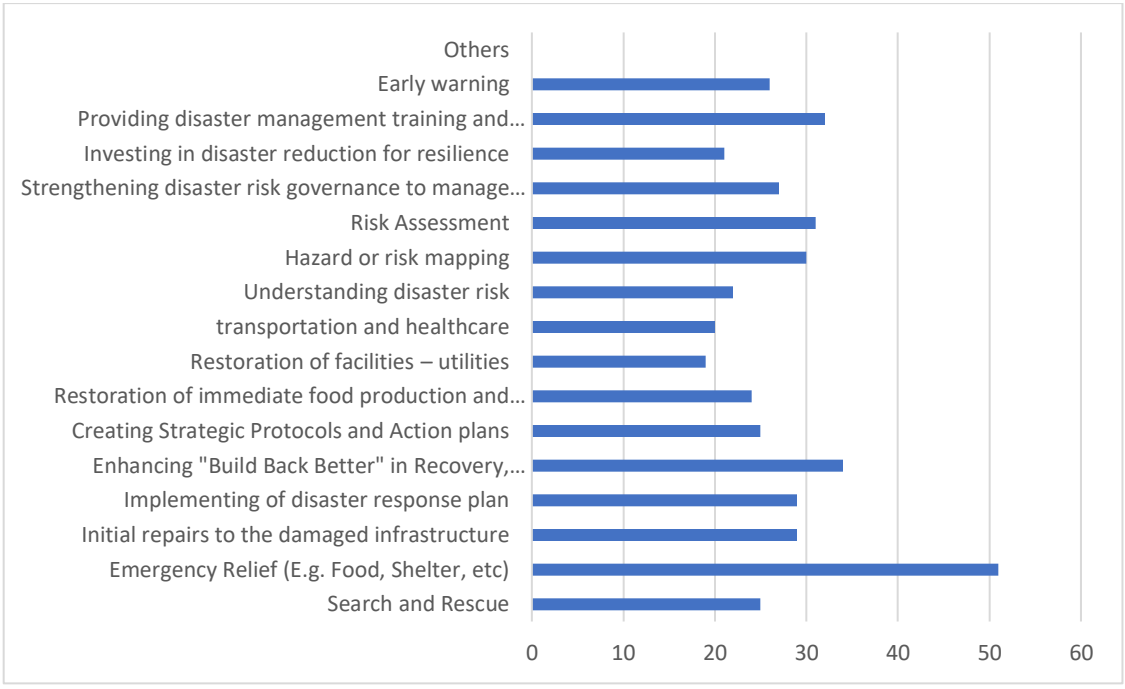

Figure 4.4: Foreign support has been provided in the sector of DRRM and climate change

4.1.6 ***Maturity Model of disaster in South Asia***

The maturity model of disaster in South Asian countries ranges from System discipline to Optimization (Table 4.4). Across all four criteria, higher scores have been seen across a decrease in total deaths (2006-2021 Vs. 1990-2005) (Annex 5). Bangladesh, Nepal, and Pakistan have scored highest in policy development, with the least score by Afghanistan and Maldives. The Maldives has seen the highest reduction in total affected and total deaths (2006-2021 Vs. 1990-2005). Afghanistan shows the highest increase in total affected (2006-2021 Vs. 1990-2005), while Nepal shows the highest increase in total deaths (2006-2021 Vs. 1990-2005). As per the GDP loss, Nepal exhibits the highest GDP loss from disaster from 1990-2021, while the least GDP loss is seen in Bhutan.

Table 4.4: Maturity model for assessing disaster operations along with INFORM Risk Index 2022 score. Per category score range from 1-5. *

Countries	**Policies development**	**Total Affected decrease (2006-2021 Vs. 1990-2005)**	**Total Deaths decrease (2006-2021 Vs. 1990-2005)**	**GDP Loss**	**Score (out of 5)**	**Classification**	**INFORM Risk Index 2022**
Afghanistan	2	1	3	4	2.5	System discipline	3
Bangladesh	4	4	5	3	4	Optimization	27
Bhutan	3	4	4	5	4	Optimization	111
India	3	4	4	3	3.5	System integration	38

Maldives	2	5	5	1	3.25	System integration	140
Nepal	5	2	1	1	2.25	System discipline	44
Pakistan	4	3	4	2	3.25	System integration	22
Sri Lanka	3	3	5	3	3.5	System integration	95

**Note: Maturity model classification range from immature, signifying an almost complete lack of DRRM system to optimization.*

Afghanistan (2.5/5): Policy-wise, there is minimum development with even a complete lack of policy for climate change. Taking into account the total affected by the disaster in 2006-2021 Vs. 1990-2005, almost 755 percent increase in total affected is witnessed while the deaths have declined by 57 percent. Total damage induced by the disaster from 1990-2021 encompasses 1.76 percent the GDP of the country. The INFORM Risk Index is also reflective of this maturity model score as very high risk is exhibited.

Bangladesh (4/5): Policy-wise, there is high development. Taking into account the total affected by the disaster in 2006-2021 Vs. 1990-2005, 38 percent decrease in total affected is witnessed while the deaths have declined by 94 percent. Total damage induced by the disaster from 1990-2021 encompasses a 7.66 percent GDP of the country. The INFORM Risk Index, however, classifies Bangladesh as high risk, and hence maturity score is not entirely reflective of this.

Bhutan (4/5): Policy-wise, there is moderate development. Taking into account the total affected by the disaster in 2006-2021 Vs. 1990-2005, a 69 percent decrease in total affected is witnessed while the deaths have declined by 86 percent. Total damage induced by the disaster from 1990-2021 encompasses only 0.24 percent the GDP of the country. The INFORM Risk Index is also reflective of this maturity model score as low risk is exhibited.

India (3.5/5): Policy-wise, there is moderate development. Taking into account the total affected by the disaster in 2006-2021 Vs. 1990-2005, 33 percent decrease in total affected is witnessed while the deaths have declined by 66 percent Total damage induced by the disaster from 1990-2021 encompass 5.83 percent of the GDP of the country. The INFORM Risk Index is not quite reflective of this maturity model score as high risk is exhibited.

Maldives (3.25/5): Policy-wise, there is low development. Taking into account the total affected by the disaster in 2006-2021 Vs. 1990-2005, 91 percent decrease in the total affected is witnessed while the deaths have declined by 100 percent. However, the total damage induced by the disaster from 1990-2021 is quite high, encompassing 18.73 percent of the GDP of the country. The INFORM Risk Index is also reflective of this maturity model score as low risk is exhibited.

Nepal (2.25/5): Policy-wise, there is high development. However, increase in both total affected and total deaths in 2006-2021 Vs. 1990-2005 have been witnessed with total affected having increased by more than 365 percent and total deaths increased by 187 percent. Total damage induced by the disaster from 1990-2021 encompasses 21.16 percent of the GDP of the country, which is the highest for any South Asian country. The INFORM Risk Index is also reflective of this maturity model score as high risk is exhibited.

Pakistan (3.25/5): Policy-wise, there is high development. Taking into account the total affected by the disaster in 2006-2021 Vs. 1990-2005, a 28 percent increase in the total affected is witnessed while the deaths have declined by 88 percent. Total damage induced by the disaster from 1990-2021 encompassed 13.32 percent GDP of the country. The INFORM Risk Index is not reflective of this maturity model score as high risk is exhibited.

Sri Lanka (3.5/5): Policy-wise, there is moderate development. Taking into account the total affected by the disaster in 2006-2021 Vs. 1990-2005, 73 percent increase in total affected is witnessed while the deaths have declined by 96 percent. Total damage induced by the disaster from 1990-2021 encompasses 6.52 percent GDP of the country. The INFORM Risk Index is also reflective of this maturity model score as medium risk is exhibited.

4.2 Findings of the Study

4.2.1 *South Asian country's disaster management needs*

In South Asian countries, total damage data during different disasters is lacking. Data on total damage is only available for 22 percent of disasters occurring from 1990-2021((EM-DAT, 2021). Hence, technical support (formation of policies, technology, and alike) by foreign agencies seems to be the most important support that can be provided for disaster management in South Asian countries. Perception surveys also revealed that technical support is the most disaster-related support required by the South Asian countries (59 percent expressing it), followed by financial support (43 percent expressing it), in-kind (48 percent expressing it), and loans (61 percent expressing it).

In Afghanistan, there is a high need for policy development, especially in the realm of climate change. Robust mechanisms for disaster preparedness need to be developed as the total affected

has highly increased. With total damages unavailable for 92 percent of disasters, technical support is of prime importance in Afghanistan. In Bangladesh, loss by disaster damage needs to be reduced by investing in more resilient infrastructure. Bangladesh has taken positive steps on this front as well with the formulation of the climate change Trust Act. Sri Lanka and Nepal are the only other countries making strides in this direction. In Bhutan, policy development, especially related to climate change, is required. Amongst its top five disasters as well, the country has relented on requesting international aid. With 90 percent total damage data unavailable (not available in EM-DAT), technical support seems the ideal condition to be received for Bhutan. In India, the development of policies and decreasing damage by disasters should be of prime importance. In the Maldives, there is a high need to decrease economic loss by disasters and for policy development. The impact of the disaster on the loss of property needs to be reduced by investing in more resilient infrastructure. In Nepal, there requirement of increasing robustness of disaster response and preparedness is seen as a high increase in deaths and affected is seen. The impact of the disaster on the loss of property also needs to be reduced by investing in more resilient infrastructure. In Pakistan, the impact of the disaster on the loss of property needs to be reduced by investing in more resilient infrastructure. Finally, in the case of Sri Lanka, efforts should be given to the development of policies to decrease total deaths and economic loss.

4.2.2 ***Disaster diplomacy in Post COVID-19 Scenario***

Although maturity model classification of South Asian countries is not optimal for most countries, it does highlight that none of the countries have a complete lack of DRRM system indicated by lack of classification in immature or even context awareness classes. However, COVID-19 has shaken the resilience of countries to cope with hazards. Even India, which had resorted to declining foreign aid, an event of such prominence being the 2013 Uttarakhand flood, has received aid and

relief for COVID in the form of financial support, vaccine, provisions of masks, sanitizers, ventilators, etc. (Figure 4.5). This signifies that when disaster intensity is high, resilience still remains challenged in South Asia.

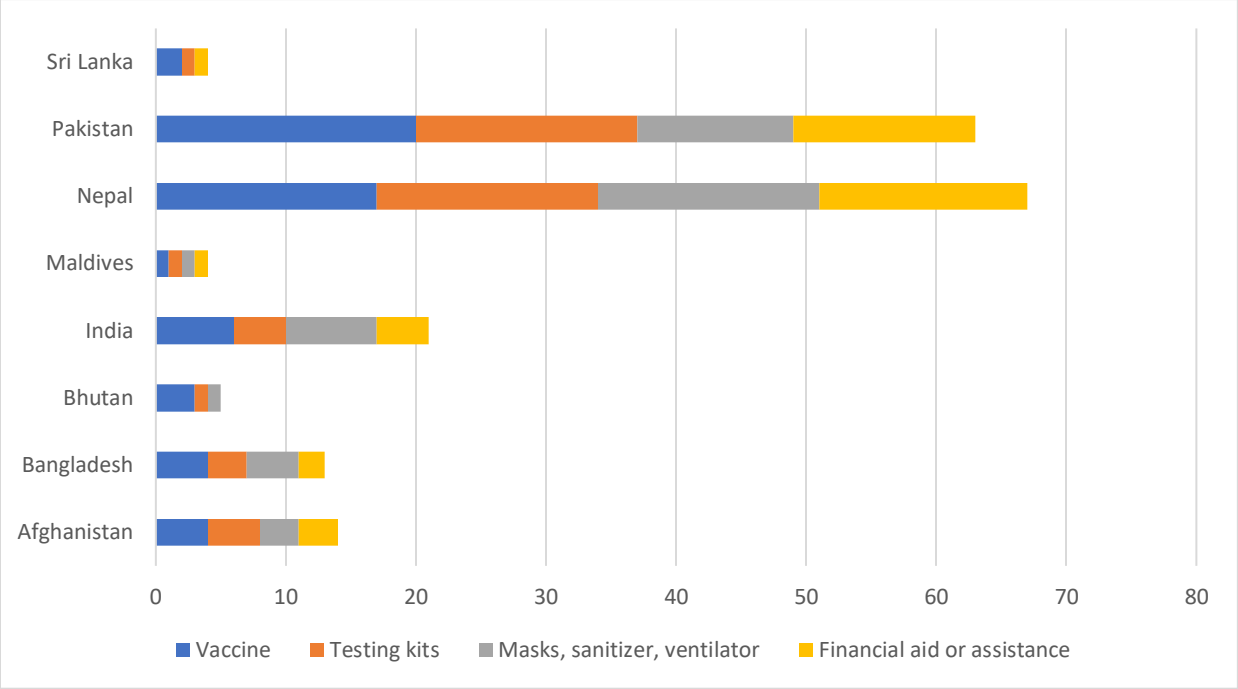

Figure 4.5: COVID-19 aid received by different countries

Disaster diplomacy should now also evolve to undertake issues of data sharing and data partnership. In the perception survey, it was found that 95 percent of respondents believed that there should be a mechanism for data sharing and data partnership for disaster management amongst countries, such as flood data sharing between countries and regions, with most believing that the national institution should undertake it.

As South Asian countries are reeling from the effect of COVID-19, it has become clear that more resources are necessary to deal with disasters. Perception surveys reveal that more than 75 percent believe the country's national budget for DRRM is not sufficient to address risk reduction and

post-disaster response and recovery. The majority believe that the prioritization of the DRRM budget should be dedicated to disaster preparedness (57 percent expressing it), followed by mitigation (41 percent expressing it), response (49 percent expressing it), and recovery (64 percent expressing it).

Disaster diplomacy also has a potent role to play in South Asia. Jones & Tarp (2016) presented a view that there is no support that aid has a systematic negative effect on the recipient government. Indeed, as can be seen, Bangladesh has a high dependency on foreign assistance for policy development and during major disasters. However, with that assistance, Bangladesh has managed to both reduce the total deaths and the total affected by the disaster.

CHAPTER 5 CONCLUSION

While all South Asian countries have institutional setup for climate change and disaster risk reduction, some countries have been more successful in managing disasters than others, as signified by countries like Bangladesh, having showcased the development of policies in both CCA and DRR, decrease in both totals affected and total deaths in comparison from 1990-2005 Vs. 2006-2021. The development of institutions dealing with climate change has been much more recent than those working on disasters. Likewise, climate change manifesting as a cross-cutting issue also makes the centralization of dealing with climate change issues by a single institution difficult. Given such a situation, an integration of DRR and CCA nexus could greatly assist in climate change adaptation. As climate change brings about more number and severity of disasters, the integration could serve both areas well.

Bangladesh's case, in particular, sparks an important discussion on the assistance provided by foreign agencies. Being one of the highest recipients of disaster assistance and for policy development and showcasing a good matrix for disaster management points to a strong role of disaster diplomacy for effective DRRM. The perception survey also aids in this assessment. Greater than 75 percent of respondents think that the current country's national budget is not sufficient for DRR. Hence, the aid and support being received by Bangladesh seem to be noted as important for DRRM. However, the lack of transparency could jeopardize the merit of disaster diplomacy in disaster management. Less than 20 percent of respondents believe that the utilization of foreign assistance in disasters in their country is transparent or very transparent. This could imply that disaster aid or support received by Bangladesh, even though used in bettering their DRRM practice, might become a point of contention because of the lack of perceived transparency.

Likewise, Nepal has scored a very low maturity score, but it is one of the highest aid and relief (both) receiving countries. This implies that even though Nepal receives aid and relief, it has not been translated into effective DRRM practice. However, Nepal scores highest in policy development, implying that if there is an issue with policies and effective DRRM practice, then the problem lies in the lack of good policies. Nepal (2018) has noted that overall, Nepal's policy interventions have made emphasis on preparedness and response rather than rehabilitation and mitigation. Perhaps this could be a reason that Nepal has such poor performance in the maturity model. Apart from the role of disaster diplomacy in monetary, goods, or services support, a new avenue could be in the form of the development of cooperation and coordination amongst countries for transboundary disaster management. Almost 97 percent respondents were of the view of the need for cooperation and coordination for transboundary disaster management. This is an area that could clearly benefit from disaster diplomacy, especially in the realm of capacity development, which is opined to be the most important form of cooperation and coordination for transboundary disaster management. Besides, a potential role of disaster diplomacy for effective DRRM in South Asian countries has been found. The role of regional organizations such as SAARC and BBIN in the South Asian region should also be active in the future debate to understand the impacts within and to collectively put forward its issue in the region.

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ANNEXES

Annex 1: List of policies in South Asian Countries related to disaster and climate change (CC= climate change-related documents, D = Disaster related documents, and UNFCCC = documents submitted to UNFCCC)

Country	Category	Sub Category	List	Date	Funding mechanism	
					Completely Self	Foreign
Afghanistan	UNFCCC	UNFCCC	National Capacity Needs Self-Assessment for Global Environmental Management and National Adaptation Programs of Action	2009		✓
Afghanistan	D	Strategy or Plan	National Disaster Management Plan	2010		✓

Afghanistan	D	Strategy or Plan	Strategic National Action Plan for Disaster Risk Reduction: Towards Peace and Stable Development	2011		✓
Afghanistan	D	Others	The Law on disaster response, management, and preparedness in the Islamic State of Afghanistan	2012		✓
Afghanistan	D	Strategy or Plan	Disaster management strategy (2014-2017)	2014		✓
Afghanistan	UNFCCC	UNFCCC	Intended Nationally	2015		✓

			Determined Contribution Submission to the United Nations Framework Convention on climate change			
Afghanistan	UNFCCC	UNFCCC	Second NC under the United Nations Framework Convention on climate change	2017		✓
Afghanistan	D	Strategy or Plan	Afghanistan Strategy for Disaster Risk Reduction in line with the Sendai Framework for Disaster Risk	2018		✓

			Reduction (SFDRR)			
Afghanistan	D	Policy	Natural Disaster Mitigation Policy in Afghanistan			✓
Bangladesh	CC	Strategy or Plan	Bangladesh climate change Strategy and Action Plan	2008		✓
Bangladesh	UNFCCC	UNFCCC	National Adaptation Programs of Action	2009		✓
Bangladesh	CC	Act	climate change Trust Fund Act	2010	✓	
Bangladesh	D	Act	Disaster Management Act	2012	✓	
Bangladesh	CC	Strategy or Plan	Bangladesh climate change	2013		✓

			and Gender Action Plan			
Bangladesh	CC	Finance	Bangladesh Climate Fiscal Framework	2014		✓
Bangladesh	CC	Strategy or Plan	Bangladesh Delta Plan 100	2018		✓
Bangladesh	CC	Strategy or Plan	Bangladesh National Action Plan for Reducing Short-Lived Climate Pollutants	2018		✓
Bangladesh	UNFCCC	UNFCCC	Third NC of Bangladesh to the United Nations Framework Convention on climate change	2018		✓

Bangladesh	D	Others	Standing Orders on Disaster	2019		✓
Bangladesh	D	Strategy or Plan	National Plan for Disaster Management (2021-2025)	2020		✓
Bangladesh	CC	Strategy or Plan	Mujib Climate Prosperity Plan	2021		✓
Bangladesh	UNFCCC	UNFCCC	Nationally Determined Contributions Bangladesh Updated	2021	✓	
Bangladesh	D	Policy	Disaster Management Policy 2015			
Bhutan	UNFCCC	UNFCCC	Bhutan National Adaptation Programs of Action	2006		✓

Bhutan	D	Strategy or Plan	National Recovery and Reconstruction Plan	2010	✓	
Bhutan	CC	Others	Framework to Mainstream Gender, Environment, climate change, Disaster Risk Reduction, and Poverty	2013	✓	
Bhutan	D	Act	Disaster Management Act of Bhutan	2013	✓	
Bhutan	D	Any specific aspect	National Action Plan for Earthquake Safety of Health Facilities	2013		✓

Bhutan	D	Any specific aspect	Environmental Management Framework For Bhutan: Improving Resilience to Seismic Risk	2013	✓	
Bhutan	D	Strategy or Plan	National Action Plan for School Earthquake Safety	2013		✓
Bhutan	D	Strategy or Plan	Disaster Risk Management Strategy	2013		✓
Bhutan	D	Others	Disaster Management Rules and Regulation	2014		
Bhutan	CC	Policy	climate change Policy of the Kingdom of Bhutan	2020	✓	

Bhutan	UNFCCC	UNFCCC	Third NC to the UNFCCC	2021		✓
Bhutan	UNFCCC	UNFCCC	Second Nationally Determined Contribution	2021		✓
Bhutan	CC	Others	National REDD+ Strategy and implementation framework			
India	D	Act	Disaster Management Act	2005	✓	
India	CC	Strategy or Plan	National Action Plan on climate change	2008	✓	
India	D	Policy	National Policy on Disaster Management	2009	✓	
India	UNFCCC	UNFCCC	Second NC to the United Nations	2012	✓	

			Framework Convention on climate change			
India	UNFCCC	UNFCCC	India's Intended Nationally Determined Contribution: Working Towards Climate Justice	2016	✓	
India	D	Strategy or Plan	National Disaster Management Plan	2019	✓	
Maldives	D	Act	Disaster Management Act	2007		
Maldives	UNFCCC	UNFCCC	National Adaptation Program of Action	2007		✓

Maldives	D	Strategy or Plan	Strategic National Action Plan for Disaster Risk Reduction and climate change Adaptation 2010-2020	2010	✓	
Maldives	CC	Others	climate change Policy Framework	2015		✓
Maldives	UNFCCC	UNFCCC	Second NC of Maldives to the United Nations Framework Convention on climate change	2016		✓
Maldives	UNFCCC	UNFCCC	Update of Nationally Determined Contribution of Maldives	2020	✓	

Nepal	UNFCCC	UNFCCC	National Adaptation Programs of Action to climate change	2010		✓
Nepal	CC	Others	National Framework on Local Adaptation Plans for Action	2011		✓
Nepal	CC	Finance	climate change Financing Framework	2017		
Nepal	CC	Finance	Nepal National REDD+ Strategy	2018		
Nepal	D	Policy	Disaster Risk Reduction Policy	2018		✓
Nepal	CC	Policy	National climate change Policy	2019	✓	

Nepal	D	Act	Disaster Risk Reduction and Management Act Amendment	2019	✓	
Nepal	D	Others	Disaster Risk Reduction and Management Rules	2019	✓	
Nepal	D	Strategy or Plan	Disaster Risk Reduction and National Strategic Plan of Action 2018-2030	2019		✓
Nepal	UNFCCC	UNFCCC	Second Nationally Determined Contribution	2020	✓	
Nepal	CC	Strategy or Plan	GESI in climate change: strategy and	2021		

			action plan, 2077-2087			
Nepal	D	Any specific aspect	Monsoon preparedness and response plans	2021	✓	
Nepal	D	Any specific aspect	Disaster risk financing strategy	2021	✓	
Nepal	UNFCCC	UNFCCC	National Adaptation Plan 2021-2050	2021	✓	
Nepal	UNFCCC	UNFCCC	Third NC to the United Nations Framework Convention on climate change	2021		✓
Pakistan	D	Any specific aspect	Earthquake Early Recovery Framework	2005		✓
Pakistan	D	Any specific aspect	ERRA-UN EARLY	2006		✓

			RECOVERY PLAN			
Pakistan	D	Any specific aspect	Gender Policy for Earthquake Affected Areas	2007	✓	
Pakistan	D	Act	The National Disaster Management Act	2010	✓	
Pakistan	CC	Policy	National climate change Policy	2012		✓
Pakistan	D	Policy	National Disaster Risk Reduction Policy	2012		
Pakistan	D	Strategy or Plan	National Disaster Management Plan	2012		✓
Pakistan	CC	Act	Global Change Impact Studies Centre Act	2013		✓

Pakistan	CC	Others	Framework For Implementation of climate change Policy 2014-2030	2013		✓
Pakistan	D	Any specific aspect	Monsoon contingency plan	2013		✓
Pakistan	CC	Act	Pakistan climate change Act	2017		✓
Pakistan	D	Others	Pakistan School Safety Framework	2017		✓
Pakistan	UNFCCC	UNFCCC	Pakistan's Second NC on climate change to United Nations Framework Convention on climate change	2018		✓

Pakistan	D	Strategy or Plan	National Disaster Response Plan	2019		✓
Pakistan	UNFCCC	UNFCCC	Updated Nationally Determined Contributions	2021	✓	
Sri Lanka	D	Act	Disaster Management Act (Act No. 13 of 2005)	2005	✓	
Sri Lanka	CC	Strategy or Plan	National climate change Adaptation Strategy for Sri Lanka 2011 to 2016	2010		✓
Sri Lanka	CC	Policy	National climate change Policy of Sri Lanka	2011		✓

Sri Lanka	UNFCCC	UNFCCC	Second NC Report on climate change	2011		✓
Sri Lanka	D	Policy	National Policy on Disaster Management	2013	✓	
Sri Lanka	CC	Strategy or Plan	Technology Needs Assessment and Technology Action Plans for climate change Mitigation	2014		✓
Sri Lanka	UNFCCC	UNFCCC	National Adaptation Plan for climate change Impacts in Sri Lanka 2016 - 2025	2016	✓	
Sri Lanka	CC	Finance	National REDD+	2017		✓

			Investment Framework and Action Plan (NRIFAP)			
Sri Lanka	D	Strategy or Plan	National Emergency Operation Plan	2017		✓
Sri Lanka	CC	Strategy or Plan	Strategic Action Plan for Adaptation of Irrigation and Water Resources Sector for climate change	2018		
Sri Lanka	D	Strategy or Plan	Sri Lanka Disaster Management Plan 2018-2030	2018		
Sri Lanka	UNFCCC	UNFCCC	Updated Nationally Determined Contributions	2021		✓

Annex 2: List of policies that were not available or not in English

Country	Categories	List	Issues
Bangladesh	D	Disaster Management Policy 2015	Not Available!
Bhutan	CC	National REDD+ Strategy and implementation framework	Not Available!
Bhutan	D	Disaster Management Rules and Regulation	Not in English!
Maldives	D	Disaster Management Act	Not in English!
Nepal	CC	GESI in climate change: strategy and action plan, 2077-2087	Not in English!
Pakistan	D	National Disaster Risk Reduction Policy	Not Available!
Sri Lanka	CC	Strategic Action Plan for Adaptation of Irrigation and Water Resources Sector for climate change	Not Available!
Sri Lanka	D	Sri Lanka Disaster Management Plan 2018-2030	Not Available!

Annex 3: Top five disasters per country from 1990-2021 on the basis of total deaths

Year	Disaster Type	Country	Total Deaths	Total Affected
2008	Extreme temperature	Afghanistan	1317	170684
2002	Earthquake	Afghanistan	1000	91228
1998	Earthquake	Afghanistan	4700	116935
1998	Earthquake	Afghanistan	2323	32818
1991	Flood	Afghanistan	728	31000
2007	Storm	Bangladesh	4234	8978541
2007	Flood	Bangladesh	1110	13771380
2004	Flood	Bangladesh	730	36000000
1998	Flood	Bangladesh	1050	15000050
1991	Storm	Bangladesh	138866	15438849
2009	Earthquake	Bhutan	11	12
2009	Storm	Bhutan	12	NA
2000	Flood	Bhutan	200	1000
1994	Flood	Bhutan	22	600
1994	Storm	Bhutan	17	65000
2013	Flood	India	6054	504473
2004	Earthquake	India	16389	654512
2001	Earthquake	India	20005	6321812
1999	Storm	India	9843	12628312
1993	Earthquake	India	9748	30000

2021	Storm	Maldives	NA	1320
2019	Flood	Maldives	NA	1800
2007	Flood	Maldives	NA	1649
2004	Earthquake	Maldives	102	27214
1991	Storm	Maldives	NA	23849
2020	Flood	Nepal	448	117677
2015	Earthquake	Nepal	8831	5639722
2002	Landslide	Nepal	472	265865
1996	Flood	Nepal	768	151382
1993	Flood	Nepal	1048	553268
2015	Extreme temperature	Pakistan	1229	80000
2010	Flood	Pakistan	1985	20359496
2005	Earthquake	Pakistan	73338	5128309
1998	Flood	Pakistan	1000	200000
1992	Flood	Pakistan	1334	6655450
2017	Flood	Sri Lanka	293	879932
2016	Flood	Sri Lanka	203	301602
2014	Landslide	Sri Lanka	196	1067
2004	Earthquake	Sri Lanka	35399	1019306
2003	Flood	Sri Lanka	235	695000

Annex 4: Survey to assess perspectives on "The disaster diplomacy in South Asian Countries"

Kindly note that the names of respondents will not be disclosed. The personal information below will only be used to contact respondents in case additional information is required to interpret the answers (i.e., to conduct fact cleaning).

1) Have you worked in disaster management in any of these eight South Asian Countries - Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka?

   A. i) Yes ( ) ii) No ( )

If YES, proceed to the survey; otherwise, the survey ends for that respondent.

2) Contact Information:

   a) Name …….

   b) Company …….

   c) Address …….

   d) City/Town …….

   e) State/Province …….

   f) Country …….

   g) Email address …….

3) Which sector do you represent?

   i) Government body ( )

   ii) NGO/INGO/Civil society ( )

   iii) University/research institute ( )

iv) Others (please specify) ……

4) Do you think the current share of your country's national budget for Disaster Risk Reduction and Management is sufficient to address risk reduction and post-disaster response and recovery?

i) Yes ( ) ii) No ( ) iii) Don't Know ( )

5) What do you think should be the prioritization of the Disaster Risk Reduction and Management budget dedicated to the following (Rank 1 is the highest share in the budget)

i) Mitigation [] ii) Preparedness [] iii) Response [] iv) Recovery []

6) Please select what measures have been taken to mitigate the impacts caused by the increasing frequency and/or intensity of disasters and climate change?

i. Strengthening DRRM and climate change Policy ( )
ii. Raising Disaster and climate change Funds at National and Local Levels ( )
iii. Investing in Disaster and Climate Resilience ( )
iv. Enhancing Preparedness for Effective Response ( )
v. Use of Technology in DRRM and climate change ( )
vi. If other measures have been taken, kindly specify them here ……..

7) Please select the kind of disaster-related foreign support most required by your country?

i) Financial (donation) [] ii) In-kind [] iii) Technical (formation of policies, technological, and alike) [] iv) Loans []

8) On a scale of 1 to 5, please indicate how transparent is the utilization of foreign assistance in disasters in your country?

   i) 1: Very transparent ( ) ii) 2: Transparent ( ) iii) 3: Moderately transparent ( )

   iv) 4: Opaque ( ) v) 5: Very opaque

9) Do you think foreign countries providing disaster assistance to your country are also seeking other diplomatic ties in your country?

   i) Yes ( ) ii) No ( ) iii) Don't know ( )

10) If YES, what do you think might be the interest in providing foreign aid to your country?

   …….

11) What kind of foreign support has been provided for disaster management in your country?

   i. Emergency Relief (E.g., Food, Shelter, etc.) ( )
   ii. Initial repairs to the damaged infrastructure ( )
   iii. Implementing of disaster response plan ( )
   iv. Enhancing "Build Back Better" in Recovery, Rehabilitation, and Reconstruction ( )
   v. Creating Strategic Protocols and Action plans ( )
   vi. Restoration of immediate food production and clean water ( )
   vii. Restoration of facilities – utilities ( )
   viii. transportation and healthcare ( )

ix. Understanding disaster risk ( )

x. Hazard or risk mapping ( )

xi. Risk Assessment ( )

xii. Strengthening disaster risk governance to manage disaster risk ( )

xiii. Investing in disaster reduction for resilience ( )

xiv. Providing disaster management training and education ( )

xv. Early warning ( )

xvi. If another foreign support has been provided for disaster management, please state it as well. …….

12) Has your country received foreign aid related to COVID-19?

i) Yes ( ) ii) No ( ) iii) Don't know

13) If YES, what kind of aid was it?

i) Vaccine ( )

ii) Testing kits ( )

iii) Masks, Sanitizer, Ventilator ( )

iv) Financial Aid ( )

v) Specify if another assistance has been provided, then what is that foreign assistance……

14) Has your country rejected disaster-related foreign aid? [Select One]

i) Yes ( ) ii) No ( ) iii) Don't know ( )

15) If yes, do you think the rejection was justified?

……

16) How much is the accountability of foreign aid during a disaster?

i) No accountability ( ) ii) Low accountability ( )

iii) Moderate accountability ( ) iv) High accountability ( )

17) Do you think cooperation and coordination amongst countries are necessary for transboundary disaster management?

a. i) Yes ( ) ii) No ( )

18) If YES, what should cooperation and coordination take the form of?

i) Data sharing ( )

ii) Financial support ( )

iii) Capacity building ( )

iv) Others (please specify) ……

19) Do you think there should be a mechanism for data sharing and data partnership for disaster management amongst countries, such as flood data sharing between countries and regions? (Signifying an upstream-downstream linkage)?

i) Yes ( ) ii) No ( )

20) If yes, who do you think should undertake this?

i) National institution ( )

ii) Transboundary consortium ( )

iii) NGOs ( )

iv) Others, who do you think should undertake it …….

21) What do you think is the best, innovative disaster management practice in your country initiated by your own country without any foreign support?

……

22) Could these practices be replicable in other countries?

i) Yes ( ) ii) No ( ) iii) Maybe ( )

23) What is your overall view on disaster readiness in your country?

……..

24) What is your overall view on disaster dependency on foreign assistance in your country?

……...

25) Do you have any additional comments, questions, or concerns you would like to share?

……

Annex 5: Raw scores of the maturity model

Country	Policies	Percent Total Affected	Percent Deaths	GDP Loss
Afghanistan	3	-754.130	57.347	1.760
Bangladesh	7	38.418	94.491	7.659
Bhutan	6	69.174	85.774	0.235
India	5	33.710	66.164	5.826
Maldives	3	90.661	100.000	18.733
Nepal	9	-365.181	-187.264	21.157
Pakistan	8	-28.298	87.669	13.325
Sri Lanka	6	-73.258	96.101	6.529