Journal of Information Systems and Informatics
Vol. 7, No. 2, June 2025 e-ISSN: 2656-4882 p-ISSN: 2656-5935
DOI: 10.51519/journalisi.v7i2.1054 Published By DRPM-UBD

The Role of Non-State Actors in Climate Governance: Contributions, Challenges and Future Directions

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Abstract

Since anthropogenic causes accelerate rapid climate change with intensifying the adverse impacts of climate induce hazards, Non-State Actors (NSAs) have emerged as pivotal actors in climate governance. The aim of this research is to explore the diverse roles and contributions of NSAs in climate governance and analyze the challenges and institutional barriers they encounter with proposing some recommendations to strengthen their impact. It employs a qualitative approach where data were collected through KII method. Thematic analysis reveals some meaningful role of NSAs in climate governance including advocating for climate justice, raising awareness, promoting sustainable technologies, enhancing community adaptation and resilience, and collaborating across sectors. Digital awareness campaign of Greenpeace during the Copenhagen and Paris Conference and BRAC's climate-resilient housing and rainwater harvesting initiatives in Bangladesh can be placed as notable examples of NSAs' roles. Despite their significant contributions, several persistent challenges such as poor coordination among NSAs and with state actors, legitimacy deficits, governance gaps, lack of institutional support and insufficient financing impedes them to realize their full potential. To overcome these challenges, this study recommends the need for legal inclusion of NSAs' roles, inclusive participation, incorporating intersectionality, stronger accountability mechanisms and sustainable financial frameworks. Furthermore, this study offers actionable recommendations for policymakers and practitioners seeking to enhance the effectiveness of non-state engagement in climate action.

Keywords: Climate Change, Climate Governance, Non-State Actors, Qualitative Research and Policy Recommendations

1. INTRODUCTION

The fast pace of climate change is a major concern for a for a substantial segment of the worldwide populace ([1]. Rapid climatic changes and global warming results in devastating natural disasters which include heavy rainfall, extreme heatwaves, flash floods, cyclones, and droughts that affects billions of individuals globally ([1], [2]. Although climate change is a natural occurrence, its rapid changes are predominantly fueled by reckless anthropogenic actions [2], [3]. Consequently, the detrimental impacts of rapid climate change pose severe

threats to both human populations and the global ecosystem. Resolving this crisis requires efficient cooperation among governments, citizens, and pertinent stakeholder [4], [5]. Until the 1990s, climate governance was predominantly state-centric that frequently failed to recognize sufficiently the substantial contributions of NSAs, including NGOs, private sector entities, academicians, media and civil society groups ([5], [6]. However, their participation at the 1992 Rio Conference progressively increased recognition and acknowledgment of their role in climate governance. Subsequently, the importance of NSAs was further recognized at the COP 21 Conference in 2015 where a historical and milestone agreement has been signed to limit global temperature increase to between 1.5°C and 2°C by the end of this century [7].

Notwithstanding this acknowledgment, in many climate-vulnerable regions particularly in the Global South, NSAs still encounter several impediments and constrains. Concerns such as fragmented approaches, limited accountability, inequitable participation, and dependency on donor-driven agendas are among the issues that NSA is constantly struggling with [8]. In addition, legitimacy and governance crises are also preventing NSA from realizing its full potential. Due to the lack of legal inclusion, NSA is unable to play a significant role in formal legal frameworks at many international and local levels [5]. In addition, NSA's own shortcomings in governance issues, such as lack of transparency and accountability in fund management and beneficiary selection, corruption, and lack of local participation in decision-making processes, are creating major challenges for NSA [4], [5] [8].

Despite the growing involvement of NSAs in climate governance, significant knowledge gaps are still prevailing. These include limited understanding of how NSAs complement or conflict with state actors, the institutional challenges they encounter in executing their roles, and the overall effectiveness of their adaptation strategies. Some studies glorify their positive impact while other focus on their limitations without a balanced and empirical assessment. Furthermore, issues like legitimacy, accountability, power imbalances, resource constraints, the neglect of intersectionality, and the risk of greenwashing have hardly been examined holistically as key challenges confronting by NSAs. This study is being conducted to fill the above deficiency. This research aims to evaluate the role of NSAs in climate governance by exploring their contributions, strategies, and challenges in shaping climate policies. Another objective is to find the problems confronted by NSAs that encompass legitimacy concerns, accountability issues, power inequalities, budgetary restrictions, exclusion of intersectionality and greenwashing. Then this study proposes some policy recommendations for overcoming these challenges. This research addresses a significant gap in the current literature by offering a balanced analysis of both their strengths and limitations. The findings of this study provide valuable insights for policymakers

and concerned climate stakeholders to enhance the efficacy, coordination, and legitimacy of NSA.

This study adopts qualitative approach where data were collected through KII from academics, NGO - INGOs representatives, climate activists, community leaders, private actors, and government officials engaged in climate policy and implementation with particular contextual examples from Bangladesh. Subsequently, the data obtained through thematic analysis and coding were divided into different categories and analyzed. To mitigate potential bias in the analysis, peer debriefing and content analysis of existing literature were conducted. Following that, the study examines some significant roles that NSAs play in climate governance which are supported by specific instances. These roles incorporate advocacy and awareness creation in climate policy formulation, promoting renewable energy technology, enhancing adaptation strategies, advancing climate justice, and fostering multi-stakeholder cooperation. The paper further examines the persistent challenges confronted by NSAs in climate governance. Lastly, in order to overcome these issues, the study proposes some policy recommendations for addressing these challenges that can ensure a more effective, equitable, and sustainable role for NSAs in global climate governance.

2. METHODOLOGY

This study utilizes a qualitative research method for describing, analyzing and exploring the roles, challenges and future contributions of NSAs in the context of climate governance. The key and primary data collection method of this study was Key Informant Interviews (KIIs) where 20 people were purposively chosen as sample. Based on their broad spectrum of expertise and practical involvement in climate governance particularly in Bangladesh, informants were selected as KIIs from different segments of society that include academia, representatives of NGOs, representatives of INGOs, government officials, climate activists, community leaders and private sector actors. Step-by-step process of conducting this qualitative research as shown in Figure 1.

2.1. Sampling and Bias Mitigation

Although, the selection of participants was based on their involvement in climate-related activities and professional knowledge, however, I should acknowledge that selection bias may have been introduced by this purposeful sample strategy which may exclude the opinions of grassroot and marginalized actors. To mitigate this bias, I have deliberately chosen diverse sources in case of selecting informants such as community leaders, local climate activists, local and international NGOs representatives, private sector actors and academia.

p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

Figure 1. Step-by-step process of conducting this qualitative research.

2.2. Data Collection and Thematic Analysis

First, the interviews were audio recorded. Later, the verbatim transcriptions were subsequently made. Next, thematic analysis approach was used to analyze the data by following Braun and Clarke's ([9]) six-phase framework which familiarization with the data, generation of initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. Subsequently, this study adopted open coding method to allow key themes and patterns to be emerged inductively from the data. Following that, these codes were grouped into more general thematic categories which reflects relationships, trends, and divergences across stakeholder perspectives.

2.3. Research Validation, Rigor and Ethical Considerations

The emergent themes were methodically cross-checked with the body of existing academic literature and gray literature such as government papers, policy briefs and NGO reports, in order to proliferate the validation and rigor of the study. To triangulate and support the primary data a content analysis of relevant secondary sources was also conducted. Furthermore, to increase the credibility

and mitigate the potential researcher bias during the coding and analysis phases, peer debriefings were conducted with colleagues who is experienced in qualitative research. Finally, it can be claimed that this research firmly adhered the ethical norms and principles throughout the research process. Every participant of this study provided their informed consent after receiving assurances of privacy, anonymity and their right to withdraw at any time.

2.4. Conceptual Framework

2.4.1. Climate and Causes of Climate Change

Weather generally denotes the atmospheric conditions at a certain location for a brief duration, typically spanning from minutes to days [1]. It denotes the state of the atmosphere at a particular time and place, which is always evolving due to the interaction of many meteorological factors [10], [11]. On the other hand, climate refers to the statistical mean of climatic variables such as precipitation, temperature, and wind speed across periods ranging from months to hundreds or millions of years[12] .The World Meteorological Organization characterizes climate as the 30-year mean of weather [3], [12], [13]. Climate change may result from natural internal processes or external forces, including variations in solar cycles, volcanic eruptions and ongoing human alterations in atmospheric composition or land use (IPCC, 2021).

2.4.2. Concept of Governance and Transformation from Government to Governance

The term governance originates from the Greek verb *Kubernan*, meaning to pilot or steer which was used by Plato in the context of designing a system of rule or government [14]. The Greek term developed into Medieval Latin *guberance*, which denotes piloting, rule-making, and steering [15]. Subsequently, in the 1980s, political scientists differentiated between government and governance by incorporating civil society actors within the governance framework [15]. The term, governance, gained significant momentum in different discipline when World Bank (WB) recognized governance deficit as the economic failure of sub-Saharan African nations [16]. WB defines governance as the manner where legitimized power is exercised in the administration and management of a country's economic and social resources for development [17]. Rhodes [18] defined governance as self-organizing interorganizational networks with interdependence, resource exchange, game rules, and considerable autonomy from the state.

While government relies on centralized and top-down authority, governance emphasizes horizontal relationships, shared responsibilities, and collaborative

decision-making processes which incorporates diverse actors. Governance involves a transition from conventional hierarchical organizational structures to network-based arrangements. It also involves a reevaluation of the relationship between the state and civil society towards a more participatory approach [19]. The transition from government to governance reflects a significant shift which redefines the state's role and increasing the participation of non-state entities in decision-making and policy implementation [20]. This shift achieved momentum in the 1970s since bureaucratic systems struggled to cope up with rapid changes, prompting a reexamination of the state's role as the central driver of socioeconomic growth ([21]. Following that, the emergence of New Public Management (NPM) in the 1980s reinforced these transformations by advocating for accountability, efficiency, and citizen-centric service provision. Afterwards, in the 1990s, globalization and technological progress necessitated multi-actor governance networks to tackle transnational issues, including climate change, terrorism, and economic interdependence, indicating a shift from state-centric control to collaborative governance frameworks [19].

2.4.3. Concept of Climate Governance

Climate governance is a framework in which various actors, including state and non-state entities, international organizations, and local communities, collaborate to confront the complex concerns of climate change [22]. It involves decision-making, policy execution, and enforcement of measures to mitigate the adverse climate effects and accelerate adaptation [23]. Climate governance acknowledges that climate change is a global issue that requires coordinated responses at all levels including international cooperation and regional collaboration. It incorporates values of equity, justice, and inclusion, acknowledging the uneven and disproportionate impacts of climate change on disadvantaged and vulnerable groups and individuals [5].

2.4.4. Concept of Non-Sate Actors

Prior to the 21st century, governments often played the crucial role in international affairs. The opportunities of involvement of non-state actors in many international issues were constrained. However, during the 1990s of the previous centuries, the scope and engagement of non-state players in a variety of domains, including international politics, business, climate, and the environment have expanded quickly [4]. Non-state actors (NSAs) are entities that engage in political, social, and economic activities but are not legally affiliated, directed, or sponsored by a state government. The term encompasses a wide variety of organizations, groups, and individuals that exercise influence on domestic and international affairs [4]. NSAs can include non-governmental organizations (NGOs), multinational corporations (MNCs), civil society organizations (CSOs),

faith-based groups, trade unions, community-based organizations, transnational advocacy networks, and even informal groups such as social movements [24]. A defining feature of non-state actors is their capacity to participate in transnational activities that often tackle issues transcending national boundaries, including climate change, human rights, poverty alleviation, and global health [19], [24].

2.4.5. A Historical Perspective on Non-State Actors in Climate Governance

The historical involvement of NSAs in climate governance illustrates (Figure 2) the changing dynamics of global environmental governance and the growing acknowledgment of climate change as a complex global challenge. Following World War II, worldwide discussions and limited movements on environmental degradation and climate change began and climate change emerged as a global political issue in the 1970s [8]. Regional and international pressure to acknowledge and resolve the difficulties posed by fast climate change has risen. In such a circumstance, the scope of states to ignore the problem of climate change became narrowed and attempts to address the problem of climate change on a global scale increased [22], [23], [24]. However, initially, climate governance was basically state-centric where nation-states served as the key actors in drafting and enforcing international climate agreements. For instance, the first major global conference to address environmental concerns and climate change was held in Stockholm in 1972 which was known as the United Nations Conference on the Human Environment. The United Nations Environment Programme (UNEP) was established as a result of the Stockholm conference. However, the conference focused on states as the primary negotiators and partners where NSAs were frequently restricted to a peripheral role, giving only assistance or technical expertise [22], [23].

However, as climate related challenges grew more complex and transnational in nature, the shortcomings of this state-centric approach became evident and problem of climate change was not sufficiently addressed. In the late 1980s and early 1990s, voluntary organizations and members of civil society formed intense movements and public opinion around the world regarding climate issues [22], [23]. In response to these conditions, the WMO and UNEP founded the Intergovernmental Panel on Climate Change (IPCC) in 1988 to furnish policymakers with thorough, authoritative, and current scientific evaluations of climate change, encompassing its causes, effects, risks, and possible adaptation and mitigation strategies [25]. The IPCC is an intergovernmental body where in addition to government representatives, NSAs such as scientists, universities, NGOs, and the media may make significant contributions to climate-related scientific research, policy and actions [8], [25]. Subsequently, at the 1992 Rio Conference in Brazil, 154 nations signed the United Nations Framework

p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

Convention on Climate Change (UNFCCC) where significant NSAs actively engaged in policy discussions alongside governmental stakeholders, underscoring the necessity of their inclusion in climate governance at each subsequent COP conference. Afterwards, the participation of non-state actors in the yearly COPs has risen throughout the years [26].

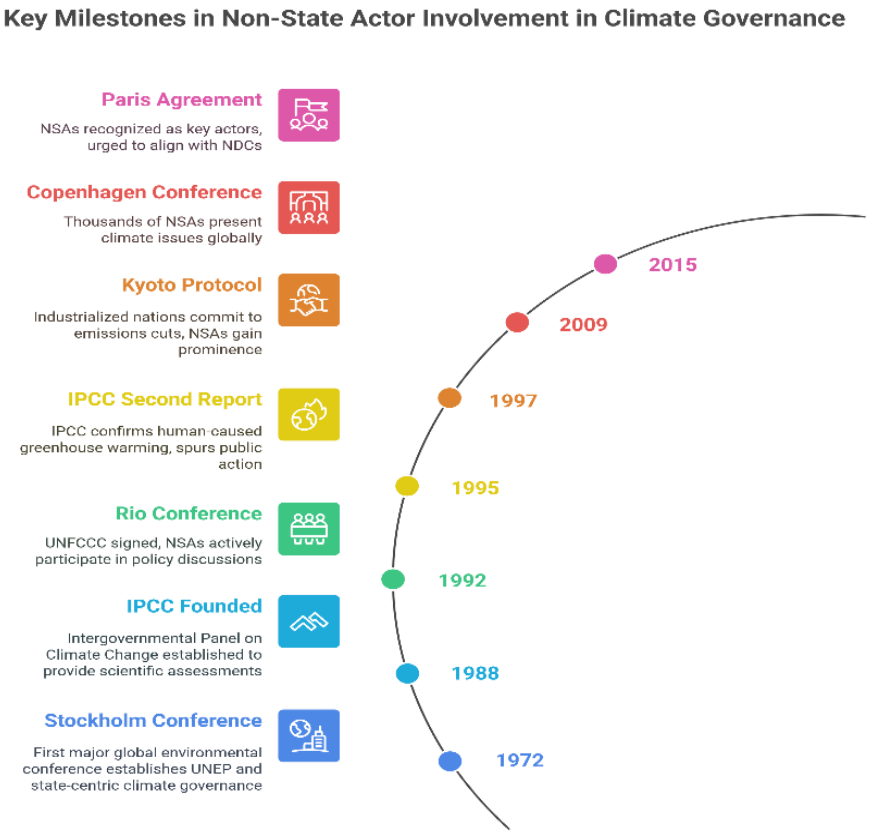

Figure 2. Historical overview of NSAs' evolving involvement in global climate governance from 1972 to 2024.

In 1995, the IPCC' second report detected the human-caused greenhouse warming effect and warned of its dangers in the next century. After the publication of this report, there was a strong public opinion around the world to reduce man-made greenhouse gas emissions, and private organizations and individuals played a significant role in this field. Later in 1997, 38 industrialized states promised to cut greenhouse gas emissions by the adoption of the Kyoto Protocol in 1997. The adoption of the Kyoto Protocol in 1997 marked a turning

point where NSAs began to gain prominence in climate governance. States have delegated authority to private actors, for instance through the Kyoto Protocol's Clean Development Mechanism (CDM) [4], [23]. Subsequently, private sector firms, NGOs, and civil society organizations progressively impacted discussions, promoting more ambitious objectives and new systems like as carbon trading. During this era, NSAs significantly contributed to increasing awareness, mobilizing public opinion, and exerting pressure on governments to fulfill climate promises [4], [23]. International NGOs like Greenpeace and the World Resources Institute became prominent proponents, while corporations commenced investments in renewable energy and environmental projects. Following that, the involvement of NSAs in climate governance significantly intensified at the 2009 Copenhagen conference where thousands of non-state participants from various regions presented their climate-related issues globally [4]. Later, in 2015, at the COP summit in Paris, there were 28,000 accredited participants, including 8,000 registered non-state observers [23]. The substantial participation of NSAs at this meeting and their significant influence in the development of the Paris Agreement publicly acknowledged their legitimacy, authority, and efficacy in climate governance [22], [23].

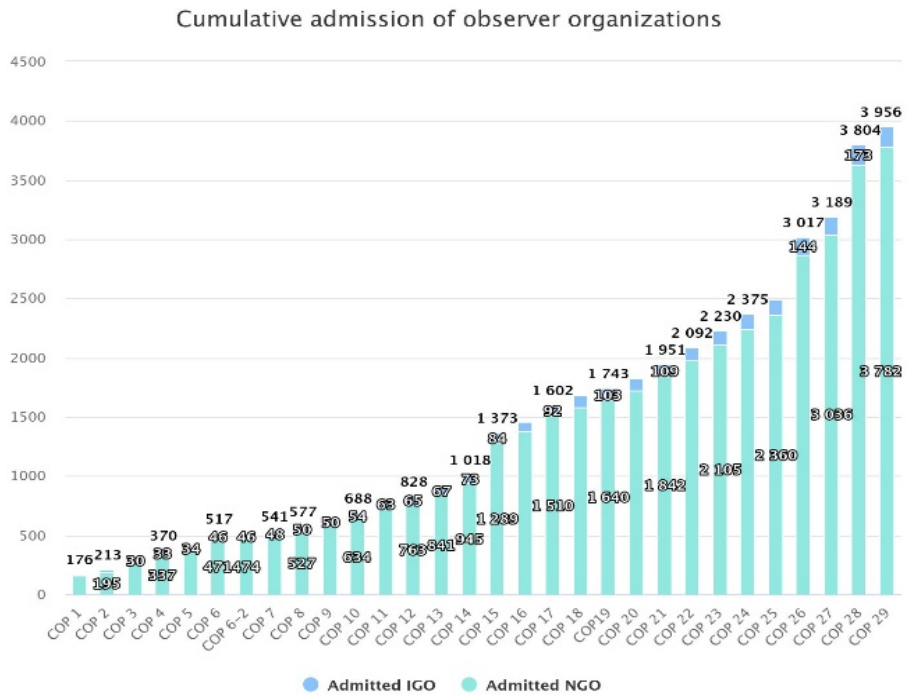

Figure 3. How NSAs have increasingly engaged in COP events between 1995 and 2024 [27].

p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

3. RESULTS AND DISCUSSION

3.1. Critical Examination of the Role of NSAs on Climate Governance

The preceding discussion illustrates that the challenges posed by rapid global climate change cannot be resolved exclusively by state institutions and their representatives. The involvement of NSAs in addressing these issues is irrefutable and the significance and extent of NSAs' role in climate governance are progressively expanding [4]. NSAs play different crucial roles in climate governance. This study will critically examine their roles in a variety of areas.

3.1.1 NSAs on Advocacy and Awareness Rising

It can be claimed that NSAs play a significant role in climate governance by advocating for stronger climate policies and raising awareness on environmental issues across the world. They act as intermediaries among policymakers, the public and marginalized communities which can amplify critical issues, mobilize public opinion and influence policy-making processes (Mehnaz Badhan, personal communication, November 2024). For instances, civil society is one of significant NSAs who play a vital role in climate governance. Since the Copenhagen Conference, the worldwide role of civil society in many climate governance concerns has expanded significantly [4]. The 2015 Paris Agreement, for example, might be cited here while 195 nations have pledged to cut greenhouse gas emissions and maintain global temperatures between 1.5 °C and 2 °C by the end of the century. The substantial involvement and pressure exerted by civil society in creating the groundwork for this accord have been extensively recognized and praised [7]. Another significant achievement of the Paris Agreement is the pledge of developed nations to provide $100 billion contribution to underdeveloped climate victim countries because developing countries claim that they require financial and technical support in order to switch to renewable energy without using fossil fuels and make effective adaptation solutions. Civil society and NSAs also played crucial role in bringing pledges for the development of this climate fund [22] [28].

Likewise, INGOs such as Greenpeace play a substantial role in campaigning for improving climate policy and increasing awareness regarding crucial environmental challenges. For instance, Greenpeace spearheaded global campaigns by public demonstrations, digital campaigns, and direct engagement with policymakers where it asked governments to formulate ambitious carbon reduction targets during the 2009 Copenhagen Climate Conference (COP15) [29]. While Greenpeace successfully influenced public discourse and highlighted the inadequacy of state commitments, critics argue that its confrontational tactics occasionally alienate governments, limiting its ability to achieve long-term

collaboration (Dr. Chowdhury, personal Communication, March 2025). Another significant example is 350.org which is an international climate movement focused on reducing atmospheric carbon dioxide levels to 350 parts per million. For example, the Fossil Free campaign of 350.org have mobilized and encouraged universities, media, faith groups and local governments to divest from the fossil fuel industry. In this campaign, 350.org engaged young people and communities worldwide by using of social media [30]. However, the movement has been reprimanded for its limited reach in Global South nations because structural impediments such as digital inequalities and budget limits prevent mass participation (Enamul Haque, personal communication, January 2025).

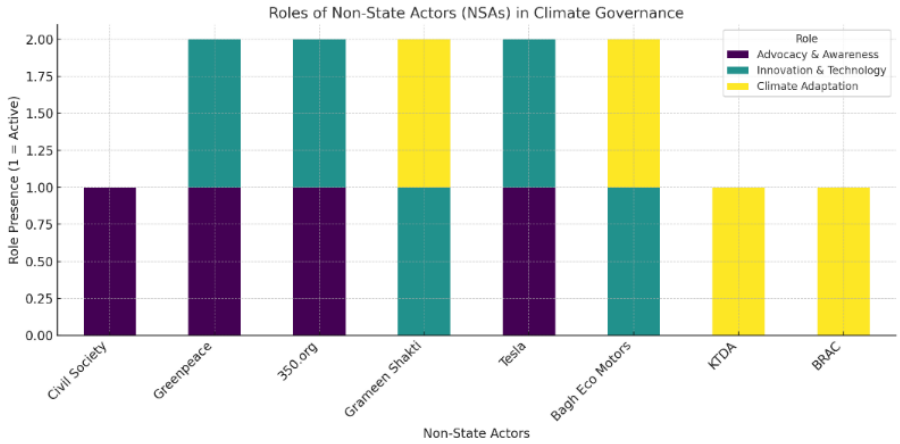

Figure 4. The types or responsibilities that NSAa play in climate governance, including advocacy, innovation, and adaptation.

3.1.2. NSAs in Innovation and Promoting Sustainable Technology Development

NSAs are becoming significant participants in global climate governance for their contribution in the field of promoting renewable energy technologies and diminishing reliance on fossil fuels (Dr. Shariful Islam, personal communication, December 2024). Since IPCC warns that electricity and heat production account for roughly 25% of total world greenhouse gas emissions, reducing anthropogenic emissions and developing alternative renewable energy technologies are essential to control global temperatures (Dr. Shariful Islam, personal communication, December 2024). In this context, governments and NSAs are now globally shifting to renewable energy sources as a feasible approach for climate mitigation [31].

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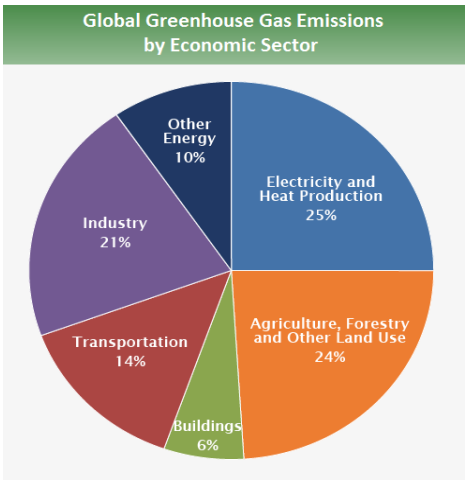

Figure 5: The global emissions of greenhouse gases characterized by economic sector [32].

A prominent instance of NSAs that promote sustainable technological advancement is Grameen Shakti which is a social business project established in 1996. The organization primarily delivers cost-effective solar home systems (SHS) to rural people in Bangladesh who have restricted access to power [31]. Grameen Shakti installed 1.8 million SHS units, accounting for 33% of global installations and 40% of Bangladesh's total solar energy adoption [33].

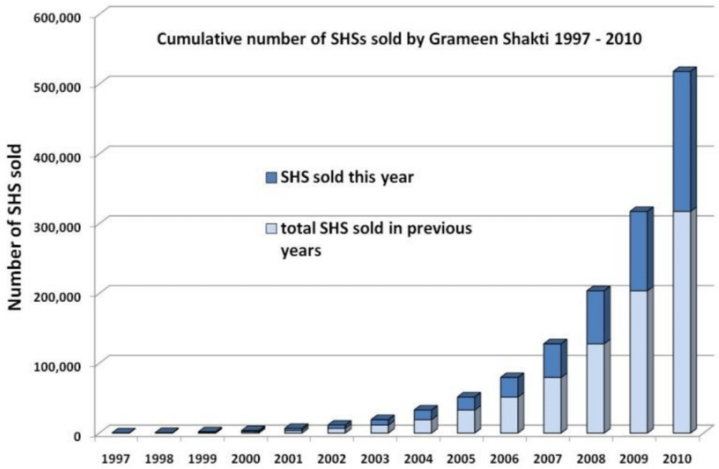

Figure 6: This chart shows the rising sales trends of Grameen Solar System [34] .

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Figure 6 reveals the contributions of Grameen Shakti to clean energy. By examining this image, it can be argued that in 2000, the sales of this sort of solar system were nearly insignificant. By contrast, within a decade, by 2010, sales surged to over 500,000 units. [35] [34]. Grameen Shakti not only promotes renewable energy but also highlights the significance of social enterprises in climate governance through its scope and approach. Initially, it enabled rural electrification through decentralized renewable energy which reduces reliance on fossil fuels. Subsequently, solar energy systems offer resilience against climate-induced disasters which frequently disrupt centralized power infrastructure in the coastal regions of Bangladesh ([31]. Moreover, the integration of solar-powered irrigation systems has enhanced agricultural productivity in climate-vulnerable regions that reduces dependency on diesel-powered irrigation pumps ((Kazal Sarder, personal communication, December 2024)). However, despite its success, challenges continue in bringing solar household systems to disadvantaged areas due to financial constraints and the intermittent nature of solar power. In addition to social business entities, it cannot be denied that the business and corporate community contribute significantly to reduce global warming by reducing fossil fuel consumption and greenhouse gas emissions (Arshad Ali, personal communication, January 2025). Numerous major corporations globally are actively promoting the utilization of renewable energy which has been illustrated in Figure 7.

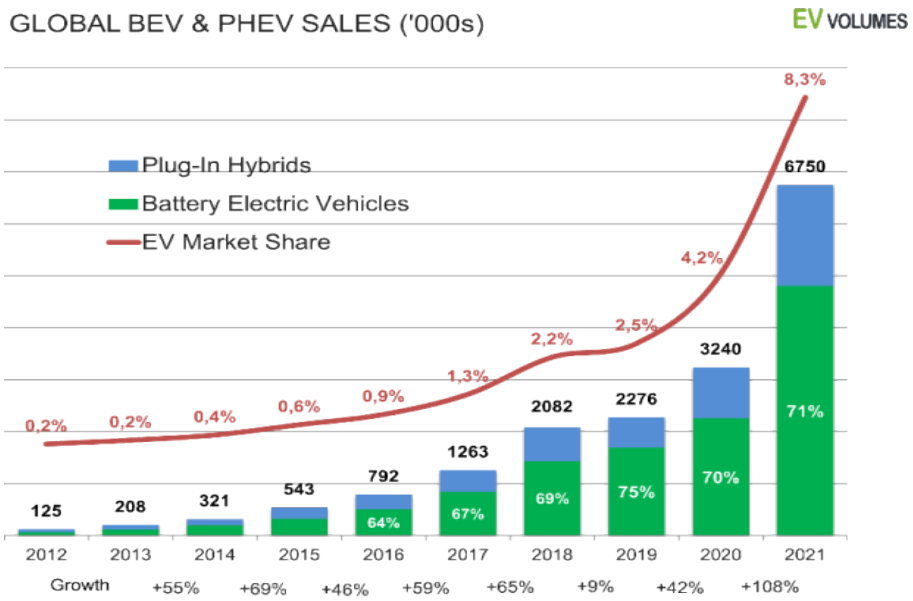

Figure 7. This chart shows the raising trend of global Electric Vehicles volumes [36].

According to Figure 7, 6.75 million electric cars were sold globally in 2021, which is 108% higher than in 2020. This volume encompasses passenger vehicles, light trucks and light commercial vehicles which demonstrate the rising trend of electric vehicles is evidence of the expansion of global carbon-free trade.

Since transportation constitutes 14% of worldwide greenhouse gas emissions, stakeholders were apprehensive about mitigating alarming figures and combating global warming. To address these concerns, engineer and entrepreneur, Elon Musk declared his intention to introduce a car that would operate without reliance on fossil fuels. Rather, these vehicles will be charged by solar energy reserves that can contribute to the mitigation of global warming and alleviating the escalating energy crisis. In 2003, he formed a company with Few engineers to develop such electric vehicles. According to his promise, he had launched the renowned Roadster automobile in 2008, stating that it would be emission-free [37]. This Tesla Company has been successful in attracting the attention of climate-conscious individuals from all over the globe in the utilization of renewable and alternative energy technology. In 2009, the company's annual revenue was $112 million which increased to $53,823 billion in 2021[38].

3.1.3 The Role of Non-State Actors in Climate Adaptation and Resilience

NSAs play a critical role in climate adaptation by complementing government efforts, filling policy gaps, and implementing innovative solutions tailored to local needs. These actors, including NGOs, private sector entities, civil society groups, and research institutions, contribute through financial investments, capacity-building initiatives, and knowledge-sharing (Abdullah Jamil, personal communication, February 2025 (Abdullah Jamil, personal communication, December 2024). The following examples highlight how NSAs have successfully developed adaptation strategies in different regions facing climate-related challenges.

Kenya, like many other African countries, faces prolonged droughts and unpredictable rainfall patterns that threaten food security and the livelihoods of millions of smallholder farmers. The Kenyan Tea Development Agency (KTDA), a private sector actor, has played a crucial role in helping farmers adopt climate-smart agricultural practices to cope with these challenges. Additionally, the KTDA has facilitated the installation of rainwater harvesting systems, ensuring a stable water supply during dry seasons [39]. Farmers have also received training in conservation agriculture, which includes minimal tillage, crop rotation, and organic composting to improve soil health and water retention. These interventions have led to higher crop yields and greater resilience to climate variability, securing the livelihoods of thousands of farmers ([39] [35].

Likewise, the Bangladesh Rural Advancement Committee (BRAC) founded in 1972. BRAC programs facilitate adaptation and mitigation via nature-based solutions and locally governed systems. Climate Resilient Housing (CRH) is such a project that support to low-income families residing in cyclone-prone regions (Showrob Ahmed, personal communication, December 2025). These climate-resilient structures have foundations above historical flood levels and can withstand winds of 250 kilometers per hour and heavy rainfall. Low-income households, particularly the disabled, elderly, and women, are given preference for these homes. BRAC is also creating another kind of climate-resilient two-storied home for climate victims that is 652 square feet in size and can accommodate a family during normal times. 30-40 people can take shelter in these houses during cyclone. While transferring the homes to the beneficiaries, BRAC puts into an agreement with the house owners requiring them to offer shelter to those in need during natural disasters [40]

One of the problems of climate change in the coastal region of Bangladesh is salt water intrusion into freshwater resources (Musharaf Hossan, personal communication, December 2024). Due to intense cyclones, storms and rising sea levels, the amount of saline water is constantly increasing which result in a fresh water crisis for people living in coastal areas [41]. To cope with this crisis, BRAC is helping people through rainwater harvesting. The coastal region of Bangladesh receives approximately 2,900 mm of rainfall per year, which is able to meet the drinking water needs of the large population of the coastal region. However, the technology and materials required to store rainwater are unaffordable for many low-income people living in the area. BRAC is helping people living in coastal areas to ensure year-round, safe, reliable and climate resilient drinking water through its rainwater harvesting project [42]. However, many questions remain in many areas regarding the adaptation and resilience activities carried out by many NGOs. For example, there is a lack of transparency in beneficiary selection in many cases. Furthermore, there is also a lack of transparency, accountability, and efficiency among the local people through whom the projects are implemented (Tariq Hsan, personal communication, February 2025).

3.1.4. The Role of NSAs in Advancing Climate Equity and Justice

Climate equity and justice are essential for marginalized and vulnerable communities because they bear uneven, disproportionate and compound burdens of climate change (Tariq Hsan, personal communication, February 2025). The following case studies demonstrate both the achievements and constrains of NSAs in promoting climate equity and justice. As an illustration, due to deforestation, illegal mining, and climate-induced droughts, Amazon indigenous communities in the rainforest have long fought against environmental degradation. These devastating activities engender their cultural heritage and

livelihoods which also bring environmental injustices for indigenous people of that region [43]. However, although indigenous played a crucial role as guardians of biodiversity, they have historically been marginalized in climate governance [43]. In this case, organizations such as Coordinator of Indigenous Organizations of the Amazon Basin (COICA) have successfully promoted for the Amazon Sacred Headwaters Initiative which could protect over 35 million hectares land from oil and mining extraction initiatives [44]. However, Indigenous-led climate justice efforts encounter significant challenges where governments and corporations often counterattack indigenous claims over land due to economic interests in resource extraction (Showrob Ahmed, personal communication, December 2025).

Another example is about Miami, Florida where growing challenge of climate gentrifications increasing because of rising sea levels and increased flooding which encourage real estate developers for purchasing lands of low-income and minority communities situated at higher elevations ([45]. As the wealthy relocate to safer, higher-elevation locations such as Little Haiti and Liberty City, the cost of property, goods, and living in those areas increases which displace long-time residents of those areas. To combat these injustices, grassroots organizations such as The Black Climate Alliance and Miami Climate Alliance have pushed government for adopting policies such as stronger tenant protections which can prevent rent increases and equitable urban planning that includes affordable housing provisions [46]. In addition, NSAs pushes government continuously for taking legal action against discriminatory real estate practices that lead to forced displacement. These efforts contributed to Climate Justice However, as real estate developers exercise significant political and economic influence, these policies face challenges in implementation [46]. Furthermore, NSAs can advocate for climate justice while they lack direct legislative power which make their initiatives difficult to enforce their demands without government cooperation (Mehnaz Badhan, personal communication, November 2024).

3.1.5. Multi-Stakeholder Collaboration in Climate Adaptation and Justice

Effective climate governance requires the collaboration of multiple stakeholders, including governments, NGOs, private sectors, local communities, and academic institutions. Multi-stakeholder collaboration can confirm diverse perspectives which are integrated into climate adaptation and justice initiatives that might foster inclusive, sustainable, and equitable solutions (Mehnaz Badhan, personal communication, November 2024). In this case, this paper can examine the role of Global Covenant of Mayors for Climate & Energy (GCoM) in facilitating multi-stakeholder collaboration in climate initiatives [47]. GCoM is a multi-stakeholder initiative that consists of local governments, private sector entities, and civil society organizations where more than 13,686 cities across 144 countries

have committed to reduce carbon emissions and implementing climate adaptation strategies at the city level. For example, cities such as Jakarta, Indonesia which are highly vulnerable to sea-level rise have collaborated with GCoM to develop their flood mitigation infrastructure and implement green urban planning projects [47]. Jakarta has improved its resilience initiatives through mangrove restoration projects and sustainable drainage systems by engaging municipal authorities, businesses, and environmental NGOs ([45]. However, sometimes such collaborations face different challenges. For example, cities often make ambitious promises during the discussion of international and municipal accords, but in many occasions, they fail to implement them later (Dr. Shariful Islam, personal communication, December 2024).

Likewise, due to extreme weather events, and coastal erosion, the Pacific Island nations are among the most climate-vulnerable. Consequently, they built a collaborative project named as the Pacific Resilience Partnership (PRP) which is a regional multi-stakeholder platform that integrates Indigenous knowledge with scientific research in fostering climate adaptation [48]. This scheme encompasses local governments, NGOs, universities and Indigenous leaders where they work together to develop community-driven resilience strategies. As an illustration this paper can highlight Vanuatu Climate Adaptation Program as a success case story which combines traditional disaster preparedness methods including indigenous early warning systems with modern climate modeling technologies [48]. PRP ensures that adaptation strategies are culturally relevant and scientifically sound which highlight the needs of collaboration among scientists and local communities. By contrast, multi-stakeholder collaboration often encounters challenges such as constrained financial resources, geographic isolation and the influence of donors and government. For example, in numerous instances foreign aid programs impose top-down solutions which sideline and suppress local voices (Enamul Haque, personal communication, January 2025). The following two tables summarize the preceding discussion on NSAs' involvement in climate governance.

Table 1: The roles and challenges of NSAs in Climate Governance and Adaptation.

NSA/ Organization	Type	Advocacy & Awareness	Innovation & Technology Development	Climate Adaptation	Challenges / Limitations
Civil Society	Civil Society	Advocacy during Paris Agreement, COP27, and climate fund pledges			Fragmented voices; limited influence on policy enforcement

NSA/ Organization	Type	Advocacy & Awareness	Innovation & Technology Development	Climate Adaptation	Challenges / Limitations
Greenpeace	INGO	Public campaigns, digital advocacy, pressuring for climate policies	Promotes renewable energy and opposes fossil fuel projects		Pushback from industries and governments; legal challenges
350.org	INGO/Movement	Fossil Free Campaign, global youth mobilization via social media	Promotes divestment from fossil fuels		Limited funding; difficulty sustaining long-term campaigns
Grameen Shakti	Social Business		Affordable Solar Home Systems (SHS); solar-powered irrigation	Enhancing rural resilience to disaster-linked power outages	High initial investment costs; maintenance challenges in rural areas
Tesla (Elon Musk)	Private Sector	Raises global attention on clean energy	Mass production of EVs, solar-powered transportation technology		Production scale vs. resource constraints; affordability for many
Bagh Eco Motors	Private Sector		Solar/electric three-wheelers, motorcycles, eco-taxis	Reducing fossil fuel dependency, indirectly aiding urban resilience	Market penetration issues; infrastructure for electric vehicles
KTDA	Private Sector			Climate-smart agriculture; water harvesting; conservation training	Smallholder farmer adoption; climate unpredictability

NSA/ Organization	Type	Advocacy & Awareness	Innovation & Technology Development	Climate Adaptation	Challenges / Limitations
BRAC	NGO			Climate-resilient housing; prioritizing marginalized communities	Resource limitations; scaling impact while maintaining quality
COICA, Amazon Watch,	NGO	Awareness program		Managing the land of indigenous people in Amazon by using traditional ecological knowledge	Conflict with government and giant business corporation in resource extraction
Miami Climate Alliance	Community organization	Advocacy program for protecting local people from climate gentrification			Conflict with the rich and government. Lack of legitimacy

Table 2. Scholarly perspectives on NSAs' influence in climate governance, highlighting their contributions, challenges, and roles across diverse contexts.

Theme	Role of NSAs	Scholarly/Expert Perspective	Notable Examples	Limitations / Criticisms
1. Advocacy & Awareness	Mobilize public opinion, Influence policy agendas, Act as intermediaries among public, policymakers, and marginalized groups	Bäckstrand et al. (2017): Civil society's role has expanded significantly since Copenhagen. Jacobs (2016) Civil society pressure was crucial for the Paris Agreement.	COP15, COP21, COP27 Greenpeace's campaigns - 350.org's Fossil Free movement	Dr. Chowdhury (2025): Greenpeace's confrontational approach may alienate policymakers. Badhan (2024): Digital inequality restricts NSA impact in Global South.
2. Innovation & Technology Development	Develop and distribute clean energy tech, - Promote decentralized	Siddiqui & Newman (2017): NSAs complement governments in scaling renewables.	Grameen Shakti's SHS in Bangladesh Tesla's EV revolution,	Arshad Ali (2025): Market challenges for eco-products in developing countries.

Theme	Role of NSAs	Scholarly/Expert Perspective	Notable Examples	Limitations / Criticisms
	energy systems, Lead private sector climate innovation	IPCC (2023): Need urgent shift from fossil fuels. Kamal (2023): Emphasizes Grameen Shakti's grassroots innovation.	Bagh Eco Motor's EVs in Bangladesh	Financial constraints.
3. Climate Adaptation	Fill policy gaps in vulnerable areas, promote locally governed resilience efforts, Implement nature-based solutions	Karuri (2020): KTDA enhances farmer resilience in Kenya. Enam (2015): BRAC's CRH program supports marginalized populations. Blakeney & Mengistie (2013): NSAs foster soil and water conservation.	KTDA in Kenya, BRAC's Climate Resilient Housing (CRH), Local agricultural innovation and training	Reliance on donor funds, Scale and sustainability often limited without state integration
4. Multi-Stakeholder Collaboration	Facilitate cross sector engagement, Build coalitions for policy coherence	Singh (2022): Civil society was instrumental in creating the Loss and Damage Fund at COP27.	COP27 Loss and Damage Fund negotiations	Fragmented coordination, Power imbalance between Global North and South NSAs
5. Limitations & Challenges	Face funding constrains, legitimacy barriers, often constrained by political resistance	Dr. Chowdhury (2025): Need for collaboration over confrontation. Badhan (2024): Digital and financial disparities hinder NSA reach. Arshad Ali (2025): Challenges in mainstreaming green entrepreneurship.	Greenpeace's limited state collaboration, 350.org's low traction in Global South	Lack of enforcement power, Dependence on external funds, Variable accountability mechanisms

Through these two tables (Table 1 and Table 2), this study illustrates a comprehensive exploration of the multifaceted roles played by Non-State Actors (NSAs) in climate governance and adaptation. Table 1 depicts specific organizations and movements (ranging from civil society groups and NGOs to private sector innovators) as well as highlights their significant contributions to advocacy, technological innovation, and local adaptation initiatives. It also acknowledges the limitations they face. Table 2 complements this by synthesizing scholarly perspectives on these roles and demonstrates how NSAs impact climate policy, enhance clean technologies, assist grassroots resilience, and bolster multi-stakeholder collaboration. Together, the tables explore an integrated view of both practical engagement and academic insights for demonstrating the growing importance, potential, and persistent challenges of NSAs in global climate

governance. Following, the types of challenges faced by NSA in playing a role in climate governance will be discussed.

3.2. Challenges Confronting Non-State Actors in Climate Governance

As this paper discussed that NSAs have emerged as pivotal players in global climate governance, their contributions encompass raising awareness and promoting innovation to supporting multi-stakeholder collaboration. At this stage, this study critically examines pitfalls and challenges with specific examples and reveals their implications for climate governance as shown in Figure 8.

Figure 8. Key themes identified from stakeholder discussions about challenges of NSAs in climate governance. Frequent, recurrent and prominent issues include coordination, intersectionality, participation, legitimacy, and access to resource.

The challenges faced by NSA in playing a role in climate governance are largely evident from the above word cloud. After analyzing the data obtained through KII interviews in a thematic manner, the above words emerged as recurrent and frequent. These challenges have also emerged clustered in Table 3.

Table 3. This clustered table presents seven key problem categories which are perceived by different stakeholder groups that highlights diverse and overlapping concerns across the governance landscape.

Category	NGOs & Activists	Academics	Govt. Officials	Community Leaders	Private Sector
Governance & Legitimacy Issues	Legitimacy crisis, Lack of accountability, Corruption	Legitimacy issues, Poor regulation	Need for legal inclusion of NSAs, Trust deficits	Corruption, Transparency lacking	Indifference from officials, Weak enforcement

Category	NGOs & Activists	Academics	Govt. Officials	Community Leaders	Private Sector
Financial & Resource Constraints	Lack of sustainable funding, Bureaucratic fund barriers	Inadequate research funding	Govt. lacks capacity to support NSAs	Poor fund management Resource misallocation	Lack of subsidies, High cost of eco-friendly goods
Inclusivity & Equity Challenges	Marginalized groups excluded, Intersectionality ignored	Participation of vulnerable groups missing	Low presence of victims in policy	Nepotism in selection, Equity ignored	Limited concern with vulnerable inclusion
Structural & Bureaucratic Barriers	Complex rules (NGO Bureau, certifications), Top-down policies	Complex approval processes, Dominant top-down policy model	Regulation-heavy, Coordination gaps	Bureaucracy limits local voice	Government non-cooperation - Overregulation
Coordination & Operational Gaps	Overlapping roles - Weak coordination	Weak synergy among stakeholders	Need more coordination with NSAs	Inefficient selection of problems	Lack of stakeholder collaboration
Knowledge & Research Deficits	Lack of contextual data - Weak evidence-based advocacy	Scarcity of climate research - Underfunded knowledge systems	Research not mainstreamed into policy	Low local awareness	Public unaware of green products - Lack of alternatives
Accessibility & Local Engagement	Urban-centric work - Poor outreach to rural/remote communities	Local voices underrepresented	Victims not included in planning	Exclusion of remote areas - Weak local presence in decisions	No link to grassroots

To create the Table 3, the data were first thematically analyzed, coded, and categorized and clustered into 7 categories using frequency and recurrence of words. This analysis shows both convergences and divergences in perspective. Some issues including legitimacy, coordination gaps, and inclusivity are universally acknowledged by all stakeholders. By contrast, specific concern such as bureaucratic barriers faced by NGOs or limited grassroots engagement of private sector reflects sector-specific constraints. This clustering emphasizes the need for integrative, multi-actor solutions in climate governance.

Journal of Information Systems and Informatics
Vol. 7, No. 2, June 2025
p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

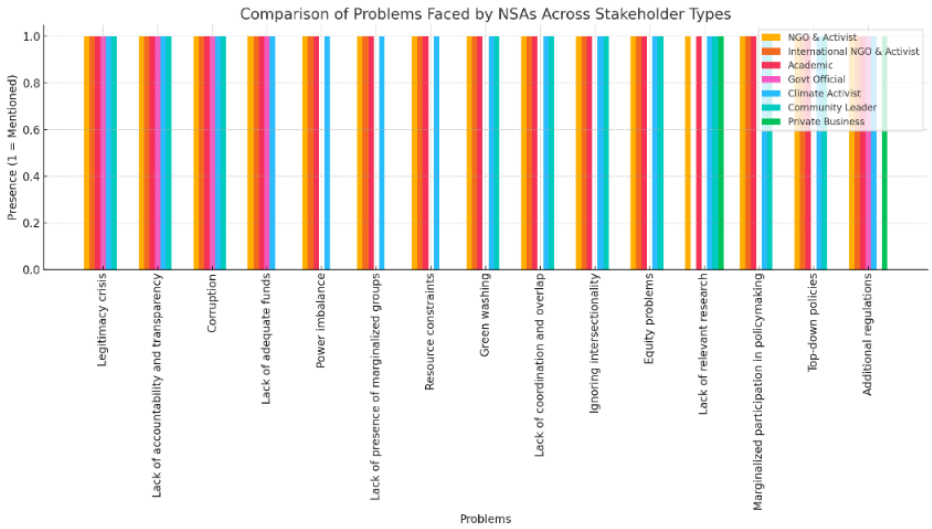

Figure 9. This chart compares the prevalence of identified problems as perceived by different stakeholder groups involved in climate governance.

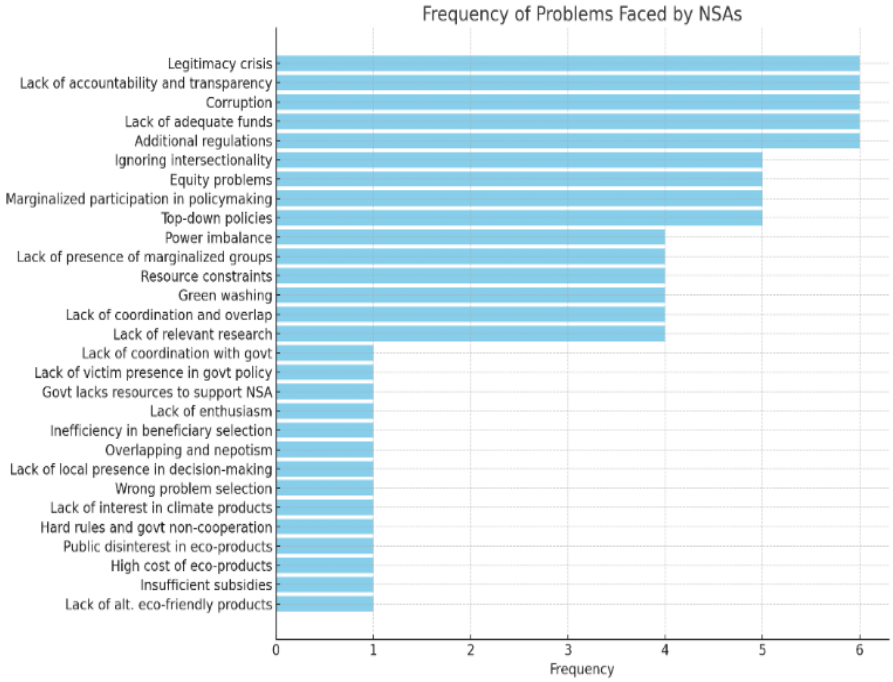

Figure 10. The most frequently cited governance and implementation challenges encountered by NSAs in climate adaptation governance.

p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

Figure 9 illustrates a striking consensus regarding the challenges NSAs face in climate governance among different categories of stakeholders such as NGOs, academics, government officials, community leaders, climate activist and private sector representatives. Some paramount issues such as legitimacy crisis, corruption, inadequate funds, and exclusion of marginalized groups have been perceived as universally prevalent. The uniformity in responses across actor types indicates the systemic and cross-cutting nature of these barriers within the climate adaptation governance landscape. These categorized problems are discussed in Figure 10.

3.2.1. Legitimacy Issues and Governance

This presented figure shows that among the most frequent and recurrent problems identified by stakeholders in working on climate governance are governance-related problems such as legitimacy crisis, lack of accountability and transparency, corruption, and excessive and unnecessary regulation. While the inclusion of numerous NSAs in the decision-making process at COP 21 in Paris in 2015 helped mitigate this crisis, they continue to encounter legal crisis to implement their different projects. In many countries, including Bangladesh, the NSA is encountering insurmountable challenges to play the desired role due to the very limited space in the legal framework (Nusrat Jahan, personal communication, March 2025). For example, in many cases, due to the lack of legal opportunities, various experts on climate adaptation and mitigation do not get adequate opportunities to seriously present their opinions to the government (Mehnaz Badhan, personal communication, November 2024). NGOs and activists expressed deep frustration over this legitimacy crisis. Government officials acknowledged trust deficits but attributed them to the limited legal inclusion of NSAs in formal policymaking processes.

However, there is less room in the legal framework for NSAs, and in the areas where there is room, the governance deficit is creating various challenges for NSAs. NGO Activist, academic, INGO representative, government official, climate activist and community leader all frequently recognize a lack of accountability, transparency and corruption as systemic obstacles to effective climate governance. For instance, influential international NGOs such as Greenpeace, WWF, and BRAC are sometimes criticized for insufficient transparency regarding their funding sources and decision-making processes (Tariq Hsan, personal communication, February 2025). Community leaders corroborated this view while they cite corruption and a lack of transparency from both officials and some NSAs that undermines the meaningful engagement of NSAs in climate governance. Academics echoed these concerns and traced poor regulatory frameworks and ambiguous mandates that allow governance gaps to persist ((Dr. Tawfiqul Islam, personal communication, December 2024). The

private sector largely blamed governmental indifference for governance failures due to weak enforcement mechanisms (Hsan Al Banna, personal communication, December 2024). These concerns collectively highlight a systemic crisis of trust, legitimacy, and governance in climate adaptation efforts which emphasize the urgent need for stronger legal mandates, accountability mechanisms, and transparency frameworks to ensure the effective and equitable participation of NSAs.

3.2.2. Financial and Resource Constraints

Figure 11 illustrates that funding inadequacies are one of the several issues that diverse actors such as NGOs, INGOs, academics, government officials, climate activists, community leaders, and private sector have agreed upon in identifying challenges for NSAs in climate governance. NGOs and activists showed their concerns on the lack of sustainable funding and the bureaucratic hurdles that impede access to available resources. In many cases, multinational corporations and giant NGOs and well-resourced international organizations can surmount these financial constraints. In contrast, local actors of Global South largely rely on short-term donor funding that often lead to the discontinuation of projects once grants expire. For instance, numerous small-scale renewable energy initiatives in Sub-Saharan Africa have failed due to insufficient long-term financial support. As a specific illustration, Universal Help Hub, NGO works in Bangladesh, initiated various long-term adaptation projects such as constructing climate-resilient housing and ensuring access to clean drinking water in the saline-affected southern districts of Khulna and Satkhira, but was eventually unable to continue these initiatives because of insufficient funding (Abdullah Jamil, personal communication, December 2024).

Similarly, Academics pointed out chronic underinvestment in climate-related research which restricts innovation and informed policymaking. Government officials could not deny this issue. Rather, they acknowledged financial and institutional limitations that hinder their ability to corroborate activates of NSAs at different cases. Community leaders acknowledge that despite financial constraints; poor fund management and misallocation of resources often lead to tokenistic or superficial interventions in vulnerable regions. On the other hand, stakeholders of private sector highlighted the high costs of implementing eco-friendly technologies and the inadequate subsidies were major deterrents for innovation of renewable technologies.

3.2.3. Lack of coordination and operational inefficiencies

Diverse NSAs actors identified lack of coordination and operational inefficiencies as significant obstacles for operating their activities proficiently.

Overlapping roles and weak communication among stakeholders are criticized by NGOs and activists that often result in duplication of efforts and confusion in climate action. In this case, this study can highlight a notable example occurred during the catastrophic floods in August 2024 across 11 southeastern districts of Bangladesh. To response to this flood, both government and non-state responses were marked by poor coordination. Therefore, some flood-affected individuals received multiple forms of aid from different NSAs, while others received none at all (Musharaf Hossan, personal communication, December 2024). Both academics and government officials acknowledged that lack of coordination between government operatives and NSAs lead to fragmented policy implementation. Private sector pointed out weak collaboration that impedes the alignment of interventions with market-based solutions. Inadequate cooperation among NSAs leads to resource inefficiencies and community fatigue as they often implement projects with conflicting objectives and overlapping scopes. Figure 11 is commonality of issues raised by different actor groups across seven problem categories.

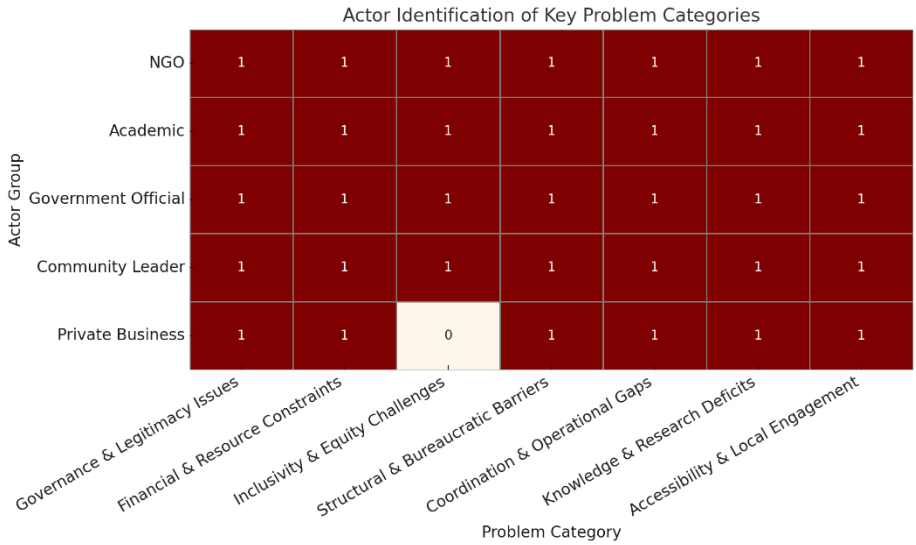

Figure 11. The commonality of issues raised by different actor groups across seven problem categories.

3.2.4. Inclusivity & Equity Challenges

One of the substantial cross-cutting issues in climate governance is the exclusion of vulnerable and marginalized people. NGOs and activists identified the persistent neglect of intersectionality and noted that that individuals who encounter compounded vulnerabilities such as disabled, children, indigenous

populations and climate refugees are rarely meaningfully included in planning and implementation processes (Musharaf Hossan, personal communication, December 2024). In this case, due to bureaucratic rigidity and elite capture, government officials acknowledged the limited visibility of victim communities in decision making and policymaking process. In many cases, academics considered the participation of these communities as symbolic rather than substantive. Nepotism in beneficiary selection and the general failure to incorporate equity issues into policy execution were broadly condemned by community leaders. Private sector acknowledged that a significant number of corporate-led sustainability initiatives frequently prioritize profit-driven approaches that shape climate policies without adequately consulting or empowering frontline communities. For example, carbon offset programs of multinational corporations in Kenya and Peru displaced Indigenous tribes from their land because these corporations did not consult with local communities in the phase project implementation (Mehnaz Badhan, personal communication, November 2024).

3.2.5. Structural & Bureaucratic Barriers

This matrix in Table 4 highlights that all groups agreed on two of the challenges faced by NSAs in playing their role in climate governance which are inadequate funding and extra regulatory burdens. For example, local and INGO workers have identified rigid and complex bureaucratic processes as obstacles to their normal activities. For instance, they told that in Bangladesh; to do any work with foreign funds, an organization must first obtain formal registration from the NGO Bureau in the Prime Minister's Office, which is very harassing and lengthy ((Dr. Omer Ahmed, personal communication, December 2024). Even after obtaining registration, NGOs still have to obtain permission from the NGO Bureau for each fund release and submit certificates from the local administration to the NGO Bureau at the end of the project. In this process, NGOs often have to compromise with NGO Bureau officials and local administration. Government officials have acknowledged this highly compromised and rigid bureaucracy and have suggested immediate reforms in all these areas (Shamsul Alam, personal communication, March 2025). Private business partners also pointed out that they are often unable to undertake and implement sustainable projects due to the country's unwelcoming and rigid bureaucracy (Hsan Al Banna, personal communication, December 2024). Academics have also seriously considered structural barriers and bureaucratic shortcomings as obstacles to the role of the NSA. These hurdles not only slow action but also insulate national policies from ground realities that weaken the overall responsiveness of the governance system.

p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

Table 4. Various climate governance challenges (problem themes) across different stakeholder groups.

Problem Theme	NGO/ Activist / Academic	International NGO	Academic	Government Official	Climate Activist	Community Leader	Private Sector
Legitimacy crisis	✓	✓	✓	✓	✓	✓	
Lack of accountability & transparency	✓	✓	✓	✓	✓	✓	
Corruption	✓	✓	✓	✓	✓	✓	
Inadequate funding	✓	✓	✓	✓	✓	✓	✓
Lack of marginalized group presence	✓	✓	✓	✓	✓	✓	
Greenwashing	✓	✓	✓		✓	✓	
Overlapping/poor coordination	✓	✓	✓		✓	✓	
Ignoring intersectionality	✓	✓	✓		✓	✓	
Equity issues	✓	✓	✓		✓	✓	
Extra regulatory burdens	✓	✓	✓	✓	✓	✓	✓
Lack of research	✓	✓	✓		✓	✓	

3.2.6. Accessibility & Local Engagement

Failure to reach out to remote and marginalized areas emerged as a critical issue. Climate activists particularly are vocal about the urban bias of most initiatives and the failure to reach the rural and coastal regions. Researchers observed that in many cases local stakeholders and compounded vulnerable section of the people such as disabled, Indigenous communities were not represented in decision making process for selecting beneficiaries and providing support. Government officials have acknowledged these limitations and added that due to rigid bureaucratic systems, inadequate manpower and structural deficiencies, they are often unable to reach the truly vulnerable groups (Abid Hasan, personal

communication, February 2024). Local leaders criticized the exclusion of grassroots agents from decision-making process and the absence of real victims from the planning of adaptation. In this case, NGO representatives have also admitted that they are also often unable to reach compounded vulnerable people due to various limitations (Afroza Khan, personal communication, December 2024).

3.2.7. Knowledge & Research Deficits

Deficiencies in context-specific knowledge and limited application of evidence-based interventions were among the points emphasized by all stakeholders. NGOs reported inability to access reliable information and susceptibility of their advocacy due to the lack of empirical backing. Scholars reported the overall lack of funding for climate research and inability to mainstream such data into policy arenas. Government officials also acknowledged that NSAs are not receiving adequate support from many government agencies for research on climate governance. Rather, a section of the government does not fully understand the need for up-to-date research. Local leaders said that in many cases, the initiatives and projects taken by NSAs on climate governance are often taken in a top-down approach, which often fails to deliver on its promises due to its conflicting position with ground realities. Private sector actors also highlighted that there is a lack of adequate research on climate governance, especially climate mitigation, adaptation and resilience. They added that renewable energy and sustainable business initiatives will only accelerate when new ideas are generated through new and innovative research.

3.2.8. Greenwashing

Academics, climate activists, and local leaders have identified greenwashing as one of the challenges to the NSA's role in climate governance. Greenwashing, or deceiving the people regarding the environmental advantages of a product and program illustrate the limitations of NSAs in climate governance. While a substantial number of corporations, organizations, NGOs and private entities claim to support sustainability, their activities simultaneously encompass detrimental environmental activities [49]. For example, fast fashion companies such as H&M and Zara promote eco-friendly apparel lines, but their whole business strategy depends on mass production and excessive use of resources [49]. Absence of sufficient regulatory mechanisms for these NSAs allows them to involve in symbolic environmentalism which reveals a critical gap in climate governance where voluntary commitments often fail to translate into real systemic and transformative changes.

p-ISSN: **2656-5935** http://journal-isi.org/index.php/isi e-ISSN: **2656-4882**

3.3. Future Directions and Policy Recommendation

This paper provides some policy recommendations to address the challenges NSAs encounter in their role in climate governance at the local, regional and international levels. If these recommendations are implemented, it is anticipated that NSAs would surmount the crises of legitimacy, accountability, resource constraints and lack of coordination in future climate governance and play a more effective and sustainable role. However, before discussing the recommendations in detail, the themes that emerged from analyzing the information obtained from the KII regarding the recommendations are presented in Figure 12.

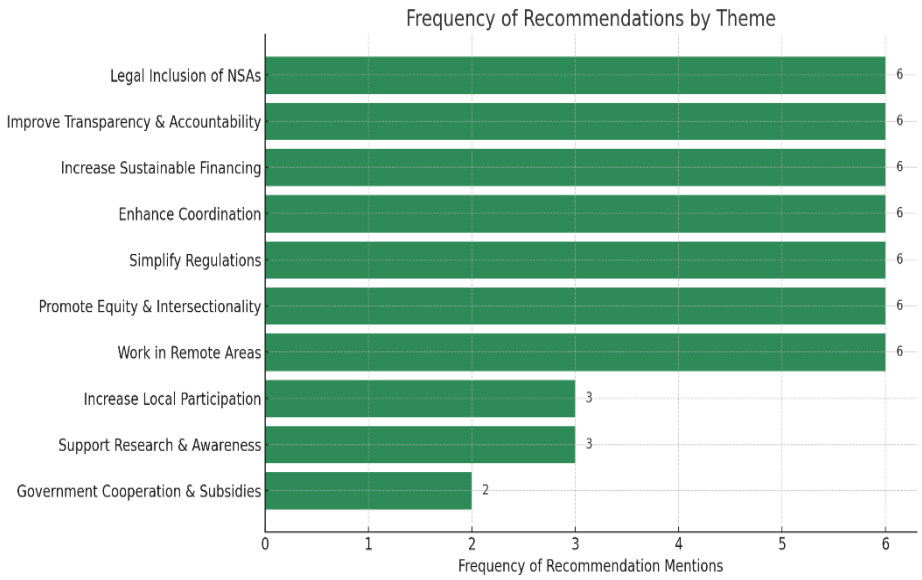

Figure 12. Frequency of recommendations by theme**.**

Figure 12 illustrates the frequency of various recommendation themes which highlights most commonly emphasized areas of recommendations. Six themes were the most frequently mentioned which incorporate legal inclusion of NSAs, improving transparency and accountability, increasing sustainable financing, enhancing coordination, simplifying regulations, promoting equity and intersectionality and working in remote areas. Moderate attention was given regarding local participation and supporting research and awareness. Government cooperation and subsidies received the least attention.

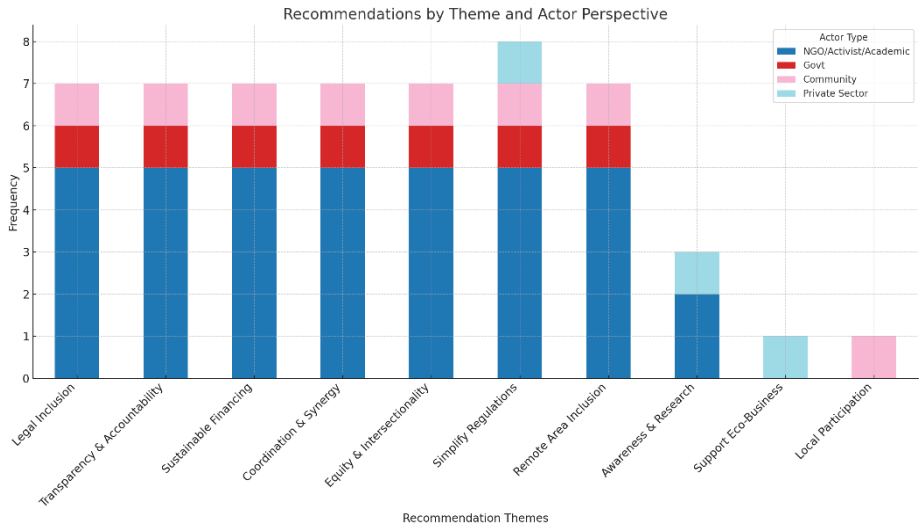

Figure 13. The frequency of each recommendation theme categorized by actor perspective (NGO/Activist/Academic, Government, Community, and Private Sector).

Figure 13 demonstrates the distribution of recommendations across various themes based on different actor perspectives that include NGOs/academics, government, community, and the private sector. Areas such as legal inclusion, transparency, sustainable financing, coordination, and regulation are recommended by NGOs, civil society, and academic institutions. While the private sector's involvement is minimal across these themes, government officials and community actors contribute moderately in this case. Local participation, support to education, and awareness and research themes received the fewest recommendations. Overall, this implies that civil society voices strongly influence policy suggestions, with other sectors participating less. Below, these themes are divided into some categories and a detailed discussion is presented.

3.3.1. Legal Inclusion & Governance Reform

Government officials, climate activists, NGOs, INGOs, academics, and even private sector actors unanimously recommended for reforming existing legal and bureaucratic frameworks to better accommodate and recognize the contributions of NSAs. The root cause of this legal clarity laid in the current state of ambiguity where NSAs frequently function on the edges without official permission or institutional backing. Furthermore, stakeholders stressed on simplifying overly complex and burdensome regulations, especially those who govern NGO registration, project approvals, and cross-sector collaboration. In addition, establishing formal mechanisms for incorporating the contributions of NSAs

into national and international climate policymaking is pivotal. Governments and intergovernmental organizations including the UN, EU, AU, and ASEAN should develop new policies and frameworks that grant a more active role of NSAs in decision-making, including advisory roles, observer status in climate negotiations, and participation in policy drafting processes. Roles, rights and responsibilities of NSAs can be formally recognized by increasing legal scopes and strengthening legal frameworks which can enhance their legitimacy and impact on climate governance. Representativeness, accountability, and efficacy of NSAs' governance systems in facilitating substantial climate action can be enhanced and strengthened by institutionalizing NSA engagement and incorporating their opinions into climate policies.

3.3.2. Strengthening Accountability and Transparency

Diverse range of actors including NGOs, INGOs, academics, government representatives, climate activists and community leaders expressed concerns about strengthening accountability and transparency to reduce the misuse of climate funds, corruption and political capture especially in vulnerable and resource-constrained environments. A significant number of informants advised for founding of independent monitoring bodies or multi-stakeholder committees that could track fund utilization and project performance. A substantial number of participants advocated for ensuring clear reporting frameworks and standardized monitoring mechanisms for ensuring transparency of NSAs. Community leaders and climate activists emphasized on disclosing funding sources and regular progress report toward climate goals that can enhance their credibility and trust. They also underscored community-led monitoring and public review processes or other sorts of independent third-party assessments and participatory accountability mechanisms that can uphold commitments and transparency of NSAs in climate governance. Furthermore, developing accessible data-sharing platforms and open-access climate impact reports would strengthen information flow which can facilitate evidence-based decision-making and allow stakeholders to evaluate the efficacy of NSA-led initiatives.

3.3.3. Enhancing Coordination and Collaboration

Stake holders including NGOS, INGOs, academic, community leaders, climate activists and government officials agreed upon that current climate governance efforts often suffer from fragmentation, duplication, and poor performance due to inadequate coordination. Therefore, they advocated for strengthening coordination to maximizing the impact of adaptation initiatives and avoiding resource wastage. Inclusive decision-making frameworks that elevate the voices of grassroots organizations, indigenous groups, and marginalized people are crucial for minimizing power imbalances and strengthening coordination and

collaboration among NSAs in climate governance. In this case, to ensure fair representation in climate decision-making, it is essential to promote equitable partnerships among international NGOs, corporate actors, and local organizations. Moreover, power disparities can be alleviated by generating funding opportunities and capacity-building programs for smaller NSAs that will enable them to enhance their influence and effectiveness. In addition, multi-stakeholder platforms can strengthen collaboration among NSAs, governments, and intergovernmental organizations in promoting data-sharing mechanisms and joint climate action strategies that can reduce duplication and improve efficiency. Furthermore, strengthening regional climate networks is also crucial to bridging gaps and reconciling disparities between local and global governance initiatives that can foster a more cohesive, unified and effective climate response.

3.3.4. Ensuring Financial Sustainability

The presented heatmap in Figure 14 visualizes that all seven actors endorsed the critical importance of establishing sustainable and diversified financial mechanisms for climate action. INGOs and NGOs expressed their concerns regarding the uncertainty of donor-driven funding cycles. They also stress on the simplification of bureaucratic procedure to accessing these funds. Academics, private sectors and climate activists demanded for increased investment in climate-related research, local innovations, and knowledge-sharing platforms. Government representatives admitted about lack of financial support and suggested for generating public-private financing models. Private sector exclusively advocated for increasing subsidies and incentives to encourage eco-friendly investments. the necessity of equitable fund distribution especially in marginalized and climate-vulnerable regions has been expressed by community leaders.

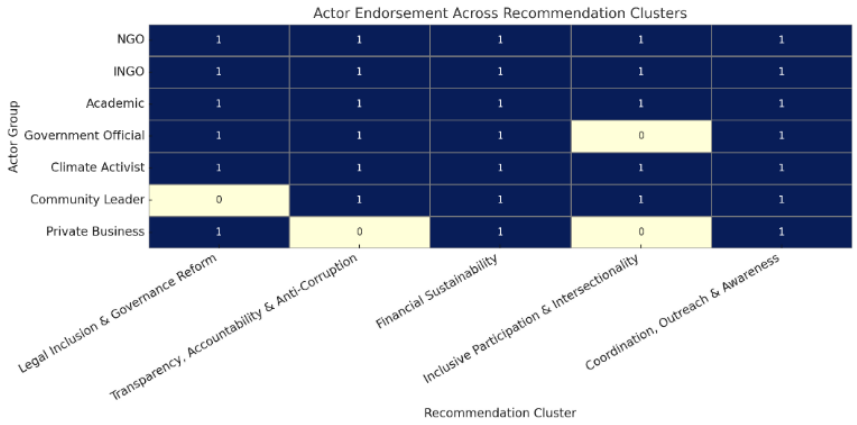

Figure 14. The endorsement of various recommendation clusters by different actor groups.

Furthermore, creating long-term, accessible funding mechanisms which prioritize the requirements of grassroots organizations, indigenous groups, and marginalized communities are essentials because these kinds of smaller NSAs often suffer from insufficient funding to implement their initiatives. In addition, blended finance, green bonds, and climate resilience funds and other innovative financing models can be augmented for fostering the various initiatives of NSAs in adaptation, mitigation and justice efforts. Moreover, government, international donors, corporations and private sector actors should enhance direct funding channels that reduce bureaucratic barriers and guarantee equitable allocation of resources. For enhancing the financial management skills of smaller NSAs, capacity-building initiatives should be integrated into funding programs that will allow them to manage their recourses and money with utmost efficiency and transparency.

3.3.5. Inclusive Participation & Intersectionality

It is proven by different scientific studies that adverse impacts of climate change affect people unevenly and disproportionately. Marginalized communities, including Indigenous peoples, women, children, and low-income and disable groups suffers from compounded effects. In this case, one of the central recommendations of NGOs, INGOs, academics, climate activists, and community leaders is the inclusion of marginalized communities and the application of intersectional principles in climate governance. They recommended that climate governance should signify the different realities of affected populations which will particularly include women, indigenous groups, people with disabilities, and climate refugees as their vulnerabilities are frequently exacerbated by sociopolitical marginalization.

Furthermore, decision-making processes should follow the principles of equity that can ensure the leading role of frontline communities in shaping climate policies and solutions. NSAs should promote for and execute gender-responsive and socially inclusive climate strategies that can integrate traditional knowledge and local expertise into adaptation, mitigation and loss and damage initiatives. In addition, specific finance and capacity-building programs initiatives must be undertaken to empower underrepresented and marginalized communities that will enable them to participate meaningfully in climate governance. The above detailed discussion regarding the recommendations is presented as summary in the Table 5.

Table 5. Clustered Recommendations with Actor Perspectives

Recommendation Cluster	Summary	Actors Emphasizing It
1. Legal Inclusion & Governance Reform	Include NSAs in the legal framework, simplify rules, reduce	NGO, INGO, Academic, Government Official, Climate

Recommendation Cluster	Summary	Actors Emphasizing It
	bureaucratic barriers	Activist, Private Business
Transparency, Accountability & Anti-Corruption	Enhance transparency and accountability mechanisms; ensure proper fund management	NGO, INGO, Academic, Government Official, Climate Activist, Community Leader
Financial Sustainability	Ensure sustainable financing, increase research funds, introduce subsidies for eco-friendly work	NGO, INGO, Academic, Government Official, Climate Activist, Community Leader, Private Business
Inclusive Participation & Intersectionality	Engage marginalized groups, apply intersectionality, increase community and local involvement	NGO, INGO, Academic, Climate Activist, Community Leader
Enhancing Coordination and Collaboration	Strengthen coordination among actors; expand to remote areas; raise awareness; support local initiatives	NGO, INGO, Academic, Government Official, Climate Activist, Community Leader, Private Business

4. CONCLUSION

Since 1992, NSAs have emerged as vital actors in shaping climate action, engaging in advocacy, raising public awareness, developing sustainable technologies, and supporting adaptation and resilience at both local and global levels. To reduce carbon emissions globally, Groups such as Greenpeace and 350.org are mobilizing people particularly youths around the word are exerting pressure in various ways through dialogue with policymakers. BRAC is making significant contributions is enhancing climate through its Climate Resilient Housing project in coastal region of Bangladesh and in Kenya, KTDA is playing an important role in climate adaptation through its rainwater harvesting project. In the Amazon, NSAs such as COICA, Amazon Watch and Rainforest Foundation facilitate and empower indigenous people in managing their land through using their traditional ecological knowledge and sustainable practices. In Miami, USA, the Black Climate Alliance and Miami Climate Alliance have pushed the government for adopting policies such as stronger tenant protections which can prevent local low-income inhabitants from the negative effects of climate gentrifications. However, despite these promising contributions, this study also reveals a set of structural, institutional, and operational challenges that impedes NSAs from utilizing their full potential. On the one hand, NSAs face governance deficits due to transparency and accountability and corruption, on the other hand, the scope of NSAs' work in climate governance is heavily constrained in many countries due to legitimacy crisis. Inadequate financial conditions also hinder NSAs from playing their expected roles, especially in various local and small organizations, which often have to rely on various corporations and government support, which often forces them to behave in a very compromised manner. This study not only highlights current contributions and gaps but also

provides strategic recommendations. To enhance the role of NSAs in climate governance, the inclusion of NSAs in the legal framework should be increased which will help NSAs to overcome the legitimacy crisis and NSAs can receive more support from the government than they currently have. NSAs will need to further improve governance issues such as transparency and accountability to increase the acceptability and appeal of their activities. In addition, financial capacity needs to be increased. Issues such as intersectionality should be seriously considered in case of proving adaptive support. Coordination and collaboration among them should be increased to limit overlapping and fragmented roles. There is still scope for more extensive research on the role of NSAs in climate governance. While corporate sustainability is increasingly visible, less is known about whether these efforts contribute to deep, systemic climate adaptation or only to greenwashing which could be researched. In addition, further research can be conducted to explore the power dynamics between state and NSAs, how NSAs will ensure their sustainable financial mechanisms and what kind of role they can play to reduce the current governance deficit. Finally, this study acknowledges that although this research has contributed valuable insights into the roles and limitations of NSAs, it is not without its constraints. The qualitative nature of the study and restricted access to global informants point to the necessity of further extensive, multi-country, and mixed-methods research to strengthen the empirical foundation of the findings.

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