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Implications of Development Cooperation and State Bureaucracy on Climate Change Adaptation Policy in Bangladesh

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Abstract: Policy action is visible in national and international climate governance. However, policy-making and its implementation often fail to generate the desired outcomes that aim to adapt to the adverse impact of climate change in a developing nation, such as Bangladesh—a country highly vulnerable to the impact of climate change. Against this backdrop, the study aims to analyze the implication of development cooperation and bureaucratic politics on the policy-making and implementation of climate change adaptation policy in Bangladesh. In doing so, the research uses national and international climate adaptation funds and the existing state administrative framework of the climate adaptation regime. Methodologically, it follows a mixed qualitative–quantitative research approach. The study discusses the following key findings: (1) the general cross-sectoral nature and thrusts of domestic and external climate adaptation funding; (2) how Bangladesh technical departments, such as that for water management, have reacted successfully to ensure the utilization of the funds is for implementing adaptation policy; (3) simultaneously, how Bangladesh bureaucracy, made of the elite, together with politics, have maintained their traditional values, practices, and structures in responding to the administrative requirements of climate adaptation funders, especially bilateral and multilateral development agencies, and (4) what changes should be brought to the bureaucratic cadre and added to the administrative setup in Bangladesh to provide a better overall impact of the adaptation policy and funding.

Keywords: climate adaptation funding; public administration; bureaucratic politics; development actors; Bangladesh

1. Introduction

Scientists and policy actors recognize that climate change has local and international consequences; hence, policy action is visible at multiple levels. The ‘Global Risks Report’ of 2016 published by the World Economic Forum placed ‘failure of climate change mitigation and adaptation’ as the top risk and identified the ‘top 5 global risks in terms of impact’ [1]. Particularly for highly vulnerable countries, such as Bangladesh, adaptation actions are necessary to decrease the current and projected climate

impacts and associated risks [2–6]. The region of South Asia is under-researched compared with global scenarios in terms of the climate adaptation policy approach, and the adaptation policy framework in Bangladesh, similar to other developing nations, is rapidly changing because of internal and external factors [7,8]. International organizations, such as the United Nations and World Bank, recognize climate change as a hindrance to achieving sustainable development goals and identify development opportunities offered by climate action [1]. Hence, climate adaptation policy seems increasingly mired in budgetary politics in the context of international climate funding [9,10].

Therefore, in the context of a development trajectory and budgetary tension, national and international actors, as potential policy options, have launched several funding programs in Bangladesh that aim to adapt to visible climate challenges. However, often, the climate policy being considered has not generated the desired outcomes [11–14]. The funding policy might have failed because of implementation problems [15,16]. The success of policy implementation largely depends on a country's administrative capabilities and settings because they do much of the policy work of the government [17–19]. Notably, institutions affect how public policies are implemented [9,20]. Moreover, bureaucratic actors under prevailing administrative traditions operate according to specific routines [18,21] and climate change adaptation requires innovative policy instruments and action [22,23] and an integrative approach to policy implementation [24]. By contrast, scholars have argued that external actors can influence domestic policy-making [25,26] and serve formal and informal interests through implementing aid programs in a recipient country [27,28].

In this context, Jordan et al. [24] remarked that 'humanity is struggling to govern climate change'. This statement suggests key components to more fully capture the implementation problems of climate adaptation policy. They emphasize the role of participating governance actors (national/international bureaus) and their development cooperation, the administrative framework/traditions in which the policy actors operate, and the underlying politics and mode of operation therein that aims to dictate the adaptation policy implementation. Hence, this study aims to analyze the implication of development cooperation and bureaucratic politics on the policy-making and implementation of climate change adaptation policy, using national and international climate adaptation funds and the existing state administrative framework in Bangladesh.

The remainder of this study develops as follows: We start by detailing the funding policy and state administrative set up of the climate adaptation regime in Bangladesh. We then present our theoretical argument and the materials and methods of the study. Next, we map the national and international climate adaptation funds and leading sectoral bureaucracies in implementing adaptation funds, followed by an analysis of the influence of funding on state administrative traditions. Before presenting the concluding remarks, we present a more detailed and critical analysis of the international funding, state bureaucratic politics, and their intrinsic implications on the implementation of climate adaptation policy.

2. Country Context: Climate Adaptation Funding Policy in Bangladesh

The Intergovernmental Panel on Climate Change identified Bangladesh as one of the worst victims of climate-induced insecurities and disasters, for example, earthquakes, cyclones, tsunamis, floods, sea-level rise, droughts, land degradation and deforestation, loss of biodiversity, and soil degradation. During the last 40 years, the economic losses in Bangladesh were approximately US\$12 billion because of climate change impacts [29]. Because the government is a signatory to the UN Framework Convention on Climate Change (UNFCCC), the country developed an appropriate climate adaptation policy framework that complies with the regime's guiding principle, in coalition with international development actors. Notably, Bangladesh is recognized internationally for its cutting-edge achievements in addressing climate change [29].

Because of concerns regarding climate vulnerability, in 2005, the nation adopted the National Adaptation Program of Action, and subsequently, in 2009, the Bangladesh Climate Change Strategy and Action Plan [30,31]. The BCCSAP is the principal national strategic climate policy framework to

set and direct all climate development activities in Bangladesh. This policy framework includes both adaptation and mitigation action programs for six thematic areas: food security, social protection, and health; comprehensive disaster management; infrastructure; research and knowledge management; mitigation and low carbon development; and capacity building and institutional strengthening [31]. The country uses its limited resources purposefully within the framework of the BCCSAP. Hence, in 2010, the Government of Bangladesh established two funding mechanisms: the Climate Change Trust Fund (BCTF) and Bangladesh Climate Change Resilience Fund [32]. The BCTF is based on domestic budgetary allocations (current amount is US\$300 million; *ibid*), and the BCCRF is multi-donor trust fund that relies on development partners' funding assistance, i.e., US\$188 million [33]. Bangladesh received funding from other climate-related trust funds, most of them managed by the World Bank [11]. Notably, the BCCRF was closed for undisclosed reasons. These two, and more importantly the government, implement climate development activities on a regular basis through the so-called ADP (Annual Development Program—see Appendix A.1), with funding sourced from domestic and donors' budgetary allocations.

3. State Administrative Setup of the Climate Change Adaptation Regime in Bangladesh

The state administrative framework related to climate adaptation comprises functional line bureaucracies and cross-cutting bureaucracies (Figure 1). The functional line bureaucracies are the sectoral ministries (e.g., agriculture, water resources), including the Ministry of Environment, Forest and Climate Change (MoEFCC), and their climate-related units, wings, focal points, and subordinate departments (e.g., Department of Environment (DoE)). The MoEFCC and its subordinate agency (i.e., DoE) are the core leading institutions for making policy decisions and the coordination and management of climate-related policies and plans of action. The Bangladesh Forest Department (BFD) administers the implementation of forest-related climate change policies [34]. The sectoral ministries with the help of its subordinate departments/agencies (i.e., the technical arms of the ministry) implement climate adaptation activities at the grassroots level. A specialized agency called Climate Change Trust belongs to the MoEFCC and coordinates and manages only Bangladesh Climate Change Trust Fund (see Appendix A.2) projects.

This climate regime comprises the supreme decision-making body of the state in the form of the National Environment Committee headed by the hon'ble prime minister and the National Steering Committee on Climate Change chaired by the minister of the MoEFCC, which are largely responsible for strategic policy guidance and oversight and the coordination and monitoring of the implementation of adaptation action plans.

In addition, the cross-cutting bureaucracies consist of the public administration, and the planning, finance, and foreign affairs ministries are responsible for supplying inputs through personnel management, short to long-term planning, allocation and mobilization of resources, and negotiations to implement climate policy successfully. The apex body is the Cabinet, comprising policy makers, and provides strategic guidance and approves (climate) policies.

The outspreading cooperation and policy support from these cross-cutting bureaucracies are expected to have incremental effects on the function of existing line bureaucracies, ultimately to develop and implement adaptation policies. For example, the line ministries and their units and focal points including the MoEFCC have been served by the officials of the general Bangladesh Civil Service (BCS) Administration Cadre (see Appendix A.3) [35,36]. The career management (i.e., positioning, promotion) of these officials is controlled by the Ministry of Public Administration (MoPA), and by positioning the officials in various hierarchies of the functional climate-related ministries and agencies, MoPA has been playing a pivotal role in guiding climate policy. The outcome of climate adaptation policy is thus determined largely by the positive interaction of bureaucracies from the functional line ministries and cross-cutting ministries, and their subordinate departments. Moreover, NGOs (Non-Governmental Organisations), individuals, media, and civil society actors are expected to extend

their expert support in the process of climate change adaptation in Bangladesh, but they probably have fragmented decision-making power at the state level [3,19].

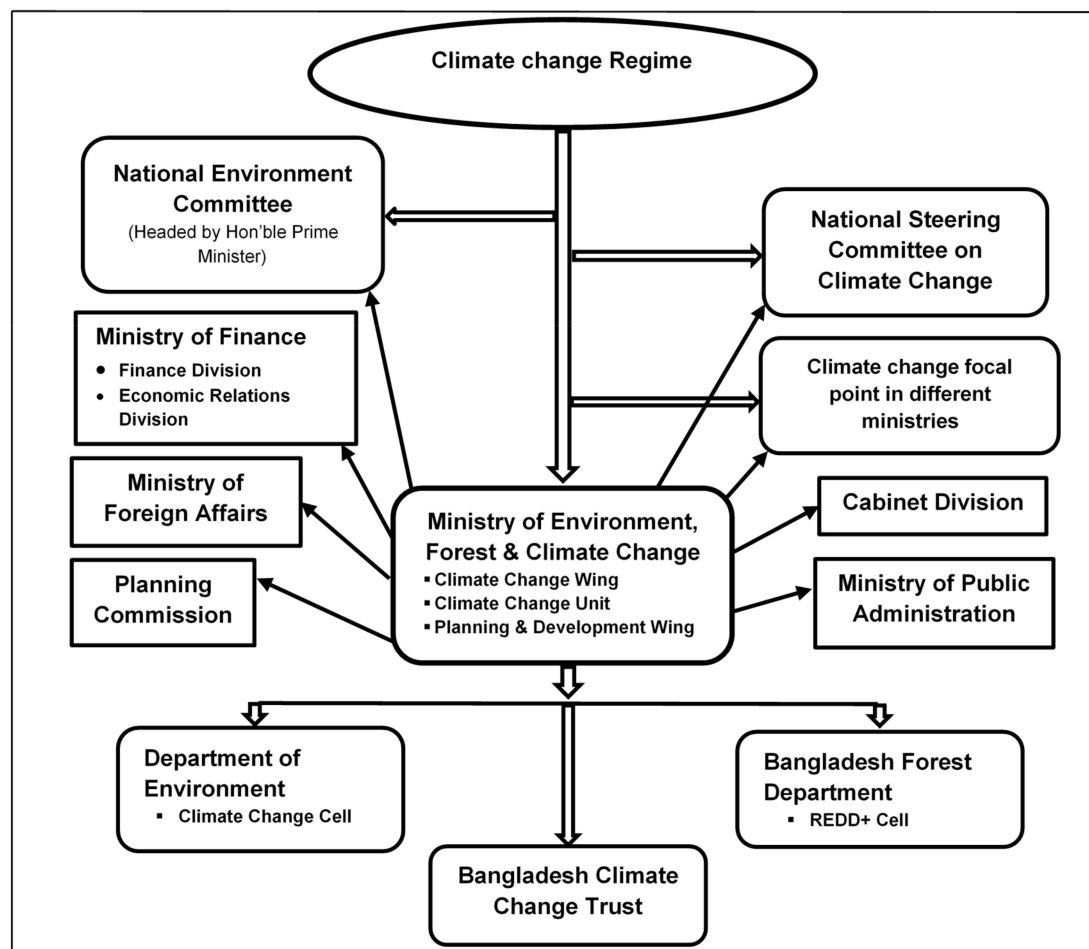


Figure 1. Functional administrative set up of climate change regime at the center in Bangladesh.

4. Theoretical Framework

4.1. International Development Cooperation in Climate Adaptation Policy

International development cooperation is the promotion of horizontal relations based on the mutual benefit, non-interference, and respect for sovereignty, rather than the vertical hierarchy invoked by the terms donor and recipient [37,38]. In general, this process begins with the background of involvement by the donor actors and serves the social and economic progress of recipient actors [38,39]. However, donors of development assistance have agreed to set rules within the framework of the Organization for Economic Co-operation and Development, which has its Development Assistance Committee (DAC), mandated with tasks of cooperation development, known internationally as Official Development Assistance (ODA) or foreign aid. The ODA has three key characteristics, namely assistance for the developing countries, such as Bangladesh; assistance that is conducive to economic development or the improvement of living standards of developing countries; and assistance that consist of grants or concessional loans (approximately 90% of ODA is grants that the developing country will not have to repay; concessional/soft loans are charged below-market rates and often have a longer repayment period) [39,40].

The development cooperation is from several bilateral and multilateral sources. ODA is ‘bilateral’ when given directly by the donor country to individuals or institutions in the recipient

country. Cooperation is bi-governmental only when government institutions from both countries are involved [41,42]. It is multilateral when provided to an international agency, such as the United Nations. The agencies decide how to spend the multilateral money, and they also receive ‘earmarked’ money [43]. Because the donors to a large extent tell the agencies how to use these earmarked funds, they are counted within bilateral aid. When counting this earmarked or ‘multi-bi’ funding, multilateral agencies actually deliver approximately 40% of the total aid [40]. Bi-multilateral cooperation is a distinct form of bilateral cooperation, implemented by an international organization (e.g., the World Bank), where cooperation still involves a donor and a recipient government [41]. Typically, ODA is provided as, for example, grants; loans; lines of credit; debt cancellation; studentships and technical training; resource-for-infrastructure swaps; and the provision of doctors, nurses, other skilled professionals, and humanitarian relief [37]. These ODA’s are split into several interventions per donor, normally in the form of projects and programs [44]. Notably, development cooperation is offered by various donors: the traditional donors or DAC members (e.g., Germany, France, the United States) and emerging donors or non-DAC members from among the economically dynamic states, e.g., China, Brazil [45].

Following the Rio Earth summit in 1992, countries agreed on the principle of international climate finance when the UNFCCC was initially established. The treaty said developed countries should provide extra financial resources to developing countries to help them pay for the costs of overcoming and adapting to climate change and to support them to establish and report on national climate plans. Notably, this initial concept of climate finance had been sharpened by the time the US\$100 billion figure was agreed to in the Copenhagen Accord in 2009 [46]. The international climate-sensitive cooperation architecture is multifaceted. Multilateral climate funds are international institutions funded by several developed donor countries to distribute climate grants and/or loans. Other forms of climate finance include bilateral (country-to-country) funds, multilateral development banks (e.g., the World Bank), and private finance (ibid). In addition, a growing number of recipient countries have set up national climate change funds that receive funding from multiple donor countries in an effort to coordinate and align donor interests with national priorities.

Figure 2 shows that the United States is currently the leading donor across all four funds, followed by the United Kingdom, Japan, Germany, and France, respectively, 2015 to 2018. The four funds are the Global Environment Facility (GEF), which was formed on the eve of the 1992 Rio Earth summit and comprises a partnership of 18 agencies (e.g., NGOs, MDBs (Multilateral development banks), and UN bodies) and 183 countries; the Adaptation Fund, established in 2001 under the Kyoto Protocol with the explicit mandate of finance adaptation and resilience activities in developing countries vulnerable to climate change; the Climate Investment Fund, established in 2008 and a major distributor of funds over the past four years; and the Green Climate Fund, established at COP17 in 2011, with a mandate to specifically leverage climate finance towards the US\$100 billion pledge, is the key financing vehicle of the UNFCCC [46–48].

Here, climate adaptation development policy could be defined as a subset of a donor’s development cooperation policy, in which a donor government (co-)finances climate adaptation-related aid measures implemented on a bi-governmental, bilateral, or bi-multilateral basis [8,41,49,50]. This research considers both bi-governmental and bi-multilateral development cooperation in the climate adaptation sector of Bangladesh to reveal the bureaucratic interests of both the donor and the recipient country in the policy-making and implementation of climate adaptation.

This type of cooperation policy could be linked to the process of bureaucratic politics because multiple bureaucratic actors and their (formal and informal) interests are involved in this development process. In this regard, a wide range of development experts view this cooperation policy (including its development concept) as a means to extend informal aspects (e.g., as a method of gaining power and to fulfil the interests of powerful actors) instead of viewing the politics as a formal development concern [51–55]. The influential actors (e.g., bilateral donors, state bureaus) participate in a policy field by utilizing their power resources (e.g., funds, technologies, staff) in various stages of the policy cycle (i.e., formulation, implementation, monitoring, and evaluation; Mahmud, 2014; Rahman et al., 2016b;

Giessen et al., 2016). Hence, development actors may shape the structure of an ongoing policy debate on a specific issue by blocking or excluding potential policy options [56,57].

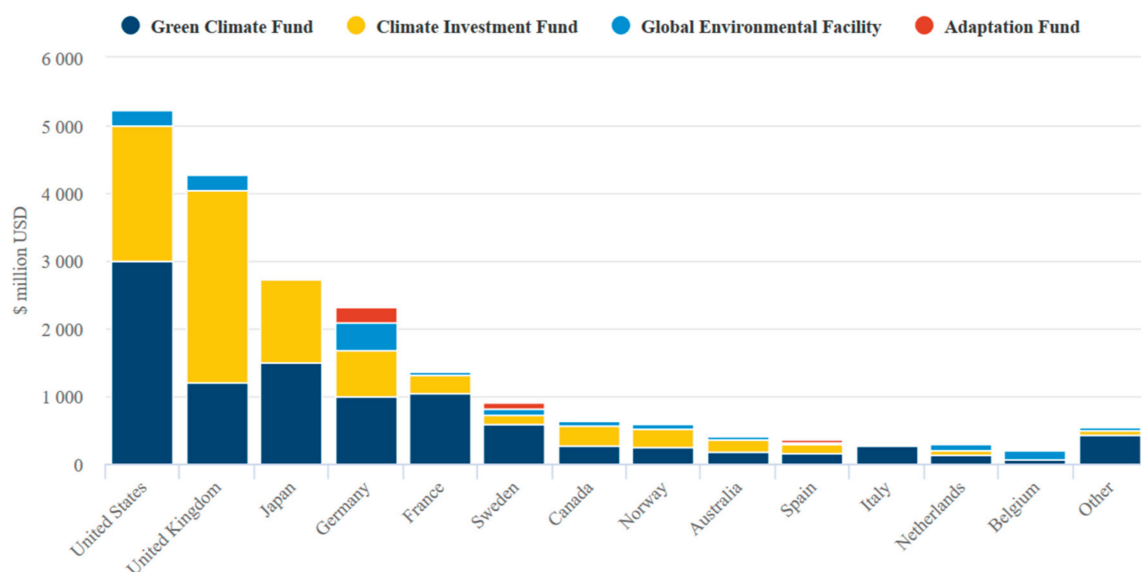


Figure 2. Leading donors' multilateral climate funds from 2015 to May 2018 (Carbonbrief 2017; Green climate fund 2018).

4.2. State Administrative Traditions and Bureaucratic Politics

The concept of traditions simply involves a statement that there are patterns in administrative behavior that persist [58]. In the public sector, administrative traditions are considered components of more encompassing state traditions, which are composed of both ideas and structures [21]. Administrative tradition is also referred to as 'historical legacies', 'administrative culture', and 'cultural-institutional context' [59]. Regarding the others, 'traditions "live" both through the thoughts and actions of contemporary actors and through the "dead hand" of inherited structures that constrain them in varying degrees' [21]. The same authors specified several variables that define the traditions and determined how those variables impact administration.

The first variable determines the aspect of the relationship between the state and the social actors. The relationship may be based on either organic or contractarian conceptions that help define the traditions [21]; the former conception defines states as intensely connected with the society and those have little meaning detaching each other, and in the later conception, the state is assumed to be a human construct—not a natural entity—and is thus highly malleable. The second variable of administrative traditions is to determine the choice between management and law that delineate the fundamental tasks of an administrator. The key argument is whether a good administrator is using the law effectively and appropriately or he/she is compromising it to get things done. They argue that a strict legalistic basis of administration is not readily compatible with a managerialist conception of managers. Knowledge of existing laws is one necessary aspect, but the capacity to draft future law while considering the social, economic, and political consequences of those policy choices is another aspect and certainly necessitates appropriate attention from the bureaucracy. In this aspect, understanding the career of a civil servant is crucial in determining the administrative traditions of a country. According to Weber's model of bureaucracy, civil servants should be selected based on achievement criteria and merit, rather than ascriptive criteria, for example, cast, ethnicity, class, or language [17]. Subsequently, 'the merit recruitment is the logical means of filling the available positions with the most qualified personnel' [17]. There are marked variations in defining the careers and how individuals are recruited, promoted, rewarded, and managed during their careers. The degree of political involvement in the bureaucracy [60] is another variable that determines the administrative traditions of a country.

The public bureaucracy, being a central actor, and organizations perform much of the policy work of the government [61]. These bureaus, according to bureaucratic politics theory, compete with each other for state budgets, staff, policy tasks, and political responsibilities [18,62–66]. This refers to the following: Bureaucratic politics reveals the struggle for power among relevant state institutions, and the evolving power is articulated in various forms, for example, dominant information, coercion, and incentives [42,67–69]. More likely, in non-domestic bureaucracies and those with an assigned mission [42,70], the foreign donors form coalitions with other foreign and domestic state and non-state actors, providing funds and other resources to influence policy and serve their interests [25,71]. The bureaucratic politics theory argues that while implementing a development program (e.g., climate change), these bureaucracies (i.e., domestic and non-domestic) tend to maximize their interests (i.e., formal and informal) based on their preferences, abilities, and power capabilities [18,71,72]. Many scholars in foreign aid literature state about international determinants of foreign aid that dictate domestic bureaucratic traditions and governance system. This is, for example, Bräutigam and Knack [73] says that aid creates vested interests among the influential bureaucrats and it affects governance and institutions in a recipient country. As Knack and Rahman [74] argue high level of aid fragmentation due to multiple interests and politics among donors declines bureaucratic quality in a recipient country. Moreover, Moore [75] points to the fact that contemporary developing countries might get quality bureaucratic framework and governance if states depend more on domestic financial resources. Against this theoretical viewpoints, our study will critically determine how international determinants of foreign aid influences on state administration and bureaucratic arrangement in a recipient country. In addition, how these bureaucratic settings and aid politics determine climate adaptation policy in Bangladesh.

Therefore, having a clearer understanding of the country's administrative context with hands-on climate adaptation funding data, and based on theoretical viewpoints regarding development cooperation, and bureaucratic politics and tradition, this study formulates the following research questions:

Question 1: How do development funds, particularly international climate adaptation funds, influence state administrative traditions in Bangladesh?

Question 2: What are the bureaucratic politics regarding development cooperation and state administration that occurs when implementing climate adaptation policy?

Question 3: What are the intrinsic policy implications of such bureaucratic politics in implementing climate adaptation policy?

5. Materials and Methods

The funding (from foreign donors) as an independent variable influences forest policy changes in Bangladesh, according to our review of the literature [27,42]. Now, the climate adaptation funding, especially from foreign donors as an influential policy/political instrument may guide and affect state administrative traditions and bureaucratic politics, both of which ultimately have immense policy implications on the said climate adaptation issues.

A mixed qualitative–quantitative research approach was employed to describe national and international climate adaptation funding and its consequences on the administrative traditions and climate adaptation policy implementation in Bangladesh. Thus, three sets of data were necessary: (1) climate adaptation funding data, (2) documents that show the linkage between funding and administrative changes, and (3) data and information to show the policy implications on climate adaptation. This study uses information on projects that addressed climate change adaptation in Bangladesh from 2009 to 2017. We used 2009 as the base year because the key guiding policy, the BCCSAP, was formulated in that year, and after cyclone Sidr in 2007—one of the worst natural disasters in Bangladesh—many policies and funding programs initiated their operation (i.e., since 2009) [76]. Subsequently, the Government of Bangladesh and foreign donors began to channel funding based on various pillars of the action plan. Furthermore, the BCCTF commenced its operation in 2010.

The funding data were climate adaptation-related development funding projects of the public sector. The study used a full quantitative survey of all funding programs being implemented to address climate change adaptation in Bangladesh. We found two consistent funding programs: ADP-based projects and Bangladesh Climate Change Trust Fund (BCCTF) projects. The ADP is the regular funding program for directing development activities in various sectors of Bangladesh. This program comprises domestic government and foreign donor-funded projects. The BCCTF is the Government of Bangladesh's funding to solely address climate change adaptation and mitigation.

Climate adaptation funding data have been analyzed in detail elsewhere already, covering a time period from 2009 to 2015 [76]. This study re-used existing data generated by Rahman and Tosun [76] of funding from 2009 to 2015. For the present study, the data described above was combined with remaining funding data of 2016 and 2017. In both cases, the relevant adaptation projects were identified by searching the following websites hosting the documentation of the ADP-projects (www.plancomm.gov.bd) and the BCCTF-projects (www.bcct.gov.bd) by using the keywords “climate change” and “adaptation”. We also checked the databases for projects associated with alternative keywords, such as “disaster risk reduction” or “resilience”, which, however, all overlapped with the projects we had identified previously by using “climate change” and “adaptation” as keywords. The outcome of this exercise was a list of all project descriptions mentioning climate change adaptation.

Next, we consulted experts in the relevant ministries to identify projects that did not mention “climate change” and “adaptation” in their project titles. Based on the information we received from the interviewees, we conducted an additional check by searching the websites of the relevant ministries and aid agencies (e.g., Asian Development Bank, World Bank, United Nations Development Program, and the United States Agency for International Development) to verify the expert opinions, as well as to clarify cases where the official documentation deviated from the information provided by the experts. We identified a total of 573 eligible government-driven projects, of which 426 are BCCTF projects and the remaining 147 are ADP-based projects.

Subsequent to having produced the list of projects, we screened the project documents in order to receive information about the following dimensions:

- funding sources
- an amount of funding provided by each donor and domestic organization
- the lead agencies in project implementation

The process-tracing method was used to understand how a foreign donor influences state administrative traditions at the domestic level. The method has widely been used as a qualitative tool to analyze the cause–effect relationship in the field of international relations and public policy analysis [71]. According to George and Bennett [77] the method ‘attempts to trace the links between possible causes and observed outcomes’. A qualitative content analysis of the donor-funded climate adaptation project documents was performed to search for a possible link between causal factors/elements of donor funding and domestic administrative change content [42,71,78]. The project documents used include project proposals, implementation modalities, project-related output documents (e.g., guidelines; directives; other policy documents and project reports, e.g., validation reports, completion reports). To facilitate tracing the changes, expert interviews (among the public administrations and climate policy experts both from government, development organizations, and academia) were conducted as explained in Appendix A.4, to have preliminary information regarding the funding and administrative changes. It was useful to pinpoint the evidence rather than gauge so many documents. The evidence was then grouped as process and outcomes [71]. The process was categorized as (i) project formulation and (ii) project implementation, and outcomes were considered the (iii) shape/reshape of national and local bureaucratic/administrative structures and (iv) changes in policy content. Subsequently, we linked the causal factors (funding) and changes in the domestic administrative setup. An intrinsic climate change policy implication study was conducted based on the findings of this study—and the first author's observations (Appendix A.5) were as a government employee, namely, a civil servant

inside the bureaucracy—and based on relevant secondary data and the literature highlighting climate adaptation policy.

6. Results

6.1. Domestic and International Climate Adaptation Development Funds in Bangladesh from 2009 to 2017

The domestic government and numerous international development actors have been providing funds to implement adaptation projects in Bangladesh (Figure 3). Overall, 61% of funds (approximately US\$3687) were sourced from the domestic government (i.e., BCCTF and ADP-based funds), and the remaining 39% (approximately US\$2385) was channelled through foreign donor agencies. This foreign donor-based funding is also included in the ADP. That means, BCCTF is solely domestic sourced fund. However, ADP is a programmatic documentation consisting of both donor-sourced and domestic sourced funds in the public sector, based on which projects of different sectors are implemented in a single fiscal year. As soon as the agreement is signed between foreign donors and government, and respective project documents are approved in the government system, the project funding being included as an ADP project. Both bilateral and multilateral donors fund are considered for including in the ADP document. Regarding donor-funded ADP projects, a mixed approach of implementation modalities is followed, wherein concerned development actors from donors, government and NGOs (if applicable) act and control over the project resources as per the agreed/approved project documents. However, project document analysis reveals that bilateral foreign donors, who provide grants, have more control and authority over project resources and implementation. Besides, multilateral donors (mostly banks), who provide loans, have less control over implementation means, but they tend to put emphasize on monitoring and compliance mechanism.

The result shows that, among the foreign donors, a few multilateral banks, and bilateral and multilateral agencies have been engaged in adaptation tasks. Among them, the World Bank was the highest contributor (i.e., 20% of the total funds); however, the Asian Development Bank supplied 4% of the total funds. Among international multilateral organizations, the International Fund for Agricultural Development, World Food Program, and GEF funded 2%, 2%, and 1%, respectively. In addition, of the bilateral donors, Japan was the leader (i.e., 4%) and channelled this aid through the Japan International Cooperation Agency, Japan International Cooperation System, and Japan Debt Cancellation Fund. Moreover, bilateral donors, such as the Department for International Development-UK, the United States Agency for International Development, the European Union, and Germany (GIZ, KfW), each participated slightly by supplying 2%, 1%, 1%, and less than 1%, respectively, of the total funds. Similarly, Norway, Australia, Switzerland, Sweden, Denmark, the Netherlands, the Spanish Trust, China, and the United Nations Development Program collectively contributed 2% of the total aid in implementing climate adaptation activities in Bangladesh.

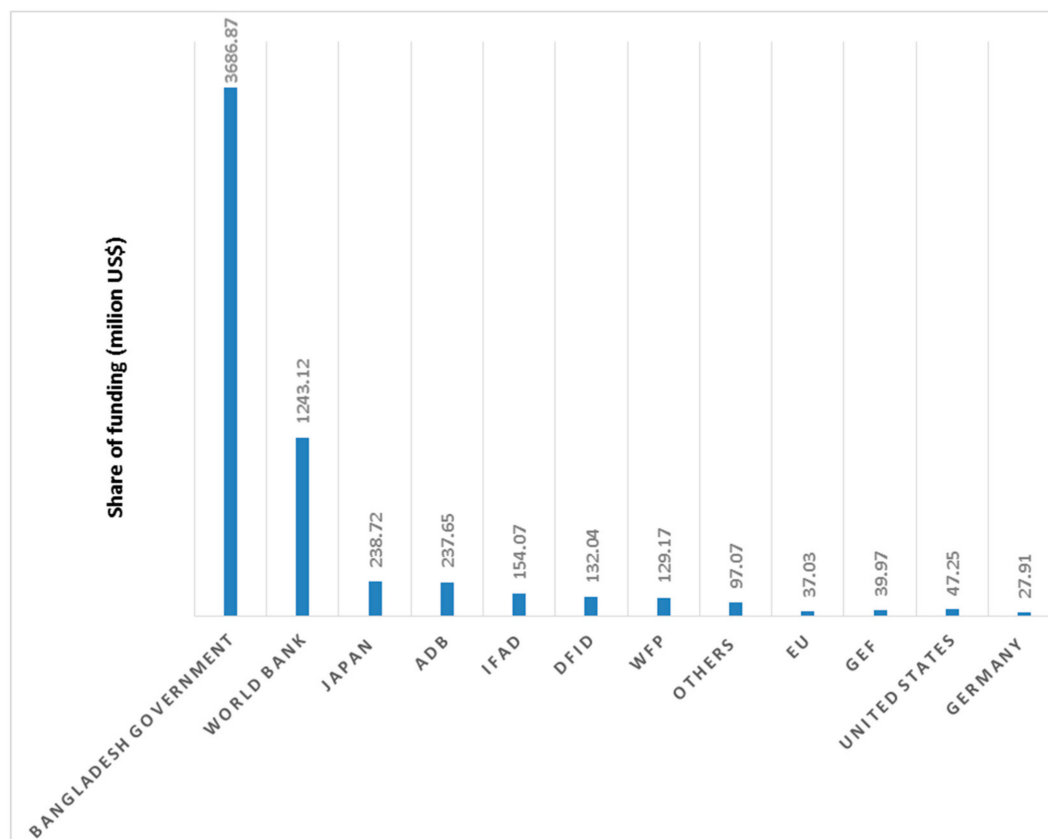


Figure 3. Domestic government versus foreign donors' funding on climate change adaptation project in Bangladesh, 2009–2017. Note: The funding data from 2009 to 2015 is based on Rahman and Tosun [76] and funding data of 2016 and 2017 were collected from Bangladesh Planning Division website (<https://plandiv.gov.bd/>) and archives of the Bangladesh Climate Change Trust Office. Here, ADB = Asian Development Bank, IFAD = International Fund for Agricultural Development, DFID = Department for International Development, WFP = World Food Program, EU = European Union, GEF = Global Environment Facility.

6.2. Implementation of Climate Adaptation Funds by Sectoral Agencies in Bangladesh

Numerous agencies have been involved with the ADP and BCCTF funding programs in implementing adaptation activities in Bangladesh.

ADP-based funds: The Water Development Board, responsible for the management of water resources, leads this fund and executed almost half of the total funds in this category (Figure 4). The Local Engineering Department, mandated to manage infrastructure at the local level, had almost half of the board's funds to implement their adaptation tasks. Several lead agencies related to food, agriculture, forestry, rural development, and disaster also contributed considerably to their respective sectors. Departments related to public health and environment, and the local government bodies, are found to have negligible involvement regarding these substantial ADP funds (Figure 4).

BCCT funds: Remarkably, almost two-thirds of the BCCTF schemes were implemented by the water board (Figure 5). Pourashava—a typical urban local government unit and local government engineering department—participated considerably. Furthermore, a sizeable amount was spent by the forest, agriculture, environment, and disaster management agencies (Figure 5).

This implies that the management of water resources is vital and the top policy priority in the country. The water-related adaptation tasks are, for example, the management of watercourses (e.g., dredging and excavation of rivers, canals), construction of polders and embankments, protection of riverbanks, and amelioration of waterlogging. Local engineering departments and other local bodies

construct and manage the local hard and soft infrastructure to adapt to the local climate challenges. Agricultural agencies, for instance, manage the groundwater for irrigation, particularly water scarcity areas (e.g., Barind areas). The research agencies, for example, invent climate-resilient rice/crop varieties for the country. The disaster management agency constructs/maintains disaster friendly shelters (e.g., cyclone shelter, flood shelter) for vulnerable communities. The forest department is active in generating/conserving forest biodiversity, particularly in the vulnerable coastal climate regions.

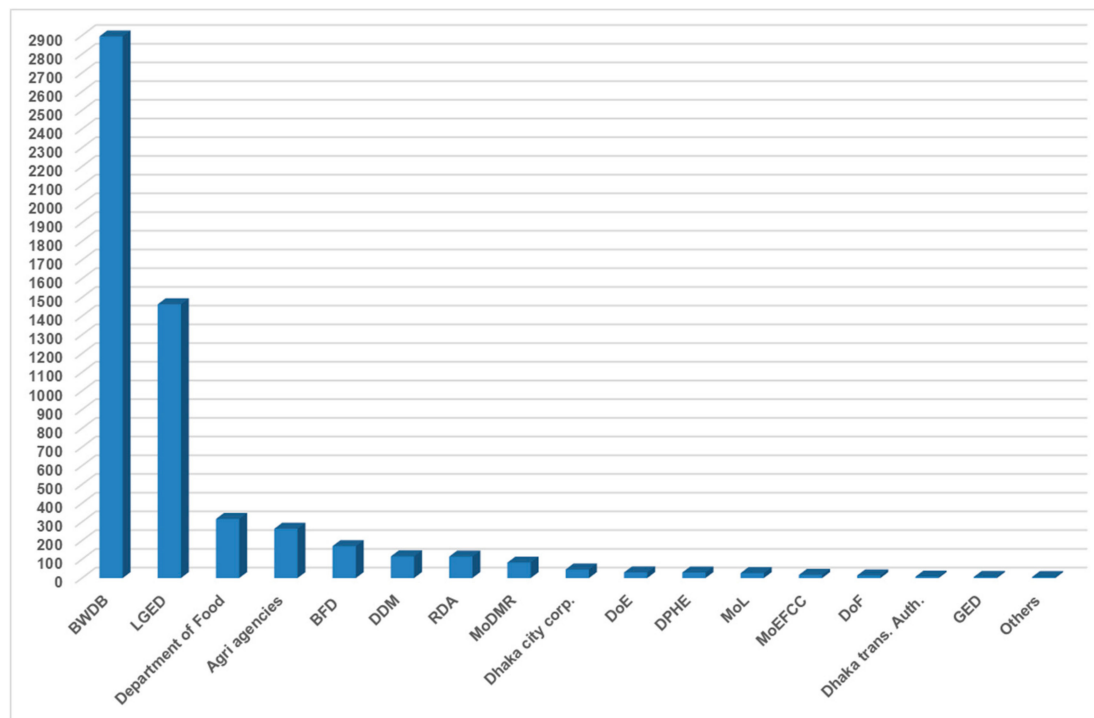


Figure 4. Implementation of climate adaptation funds by sectoral lead agencies based on Annual Development Program (ADP) projects from 2009 to 2017. Note: Data collected from Rahman and Tosun, (2018) and Bangladesh Planning Division website (<https://plandiv.gov.bd/>). Here, X-axis represents leading agencies which are responsible for implementing the climate adaptation funds, Y-axis refers amount of funds in Million US\$. In X-axis, BWDB = Bangladesh Water Development Board, LGED = Local Government Engineering Department, Agri agencies = Agriculture ministry and agencies, like, Department of Agriculture Extension (DAE), BMDA = Barind Multipurpose Development Authority (BMDA), Bangladesh Agricultural Development Corporation, Bangladesh Agricultural Research Council (BARC) and Bangladesh Agricultural Research Institute (BARI), BFD = Bangladesh Forest Department, DDM = Department of Disaster Management, RDA = Rural Development Academy, MoDMR = Ministry of Disaster Management and Relief, Dhaka City Corp. = Dhaka City Corporation, DoE = Department of Environment, DPHE = Department of Public Health Engineering, MoL = Ministry of Land, MoEFCC = Ministry of Environment Forest and Climate Change, DoF = Department of Fisheries, Dhaka trans. Auth. = Dhaka Transport Authority, GED = General Economics Division, Others = Finance Division (FD), River Research Institute (RRI), Planning Commission (PC) and Local Government Division (LGD).

Overall, Figures 4 and 5 depict that climate adaptation tasks are cross-sectoral, touch a wide variety of sectors, and are instituted from the central to the local level [79–81]. The policy actors now have a clear understanding of the proactive, less active, and unattended actors, namely, what and how much they are doing; they might use the data to formulate further policy decisions. The results indicate, for example, that health, fisheries, ICT, education, transport, commerce, industry, and the environment sectors were less active or completely absent in implementing adaptation tasks. Additionally, the

analysis implies that community-based funding schemes based on active community participation were not prominent in performing adaptation jobs.

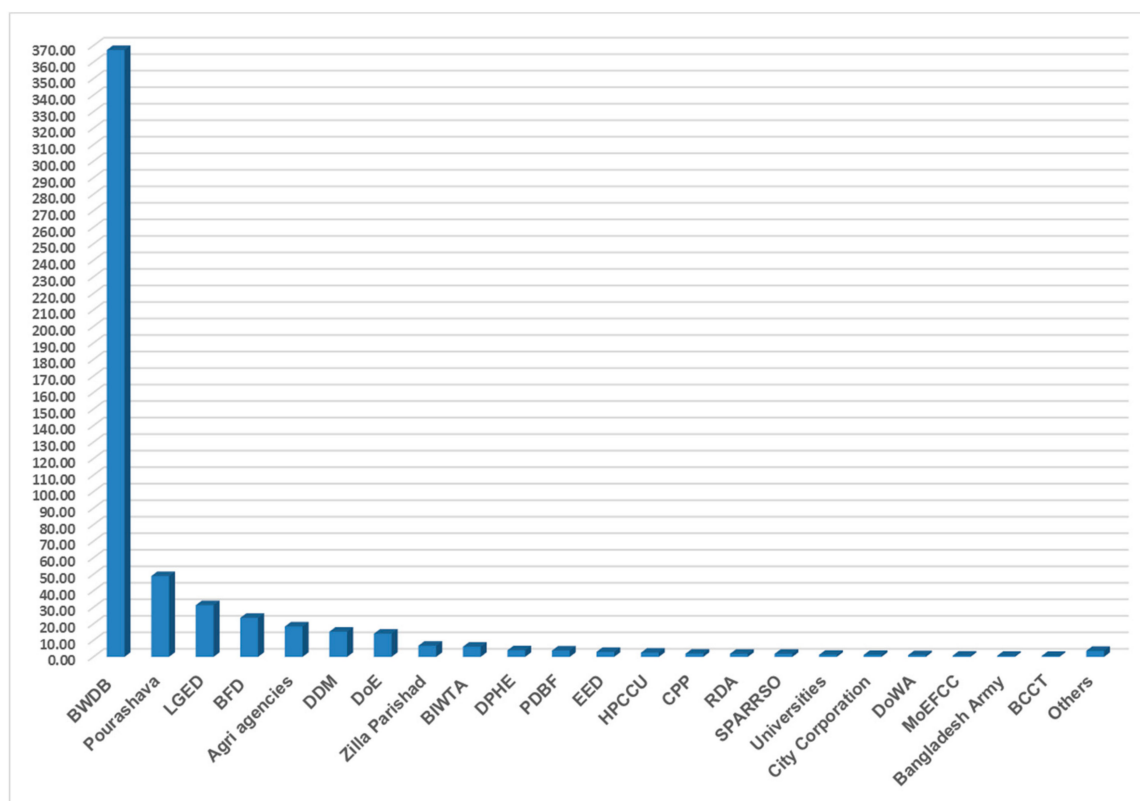


Figure 5. Implementation of climate adaptation funds by sectoral lead agencies based on Bangladesh Climate Change Trust Fund (BCCTF) projects from 2009 to 2017. Note: Data collected from Rahman and Tosun, [76] and archives of the Bangladesh Climate Change Trust Office. Here, X-axis represents leading agencies which are responsible for implementing the climate adaptation funds, Y-axis refers amount of funds in Million US\$. In X-axis, BWDB = Bangladesh Water Development Board, Pourashava = a typical urban local government body in Bangladesh, LGED = Local Government Engineering Department, BFD = Bangladesh Forest Department, Agri agencies = Agriculture agencies, like, Department of Agriculture Extension (DAE), BMDA = Barind Multipurpose Development Authority (BMDA), Bangladesh Agricultural Development Corporation, Bangladesh Agricultural Research Institute (BARI), Bangladesh Rice Research Institute (BRRI) and Bangladesh Institute of Nuclear Agriculture (BINA), DDM = Department of Disaster Management, DoE = Department of Environment, Zilla Parishad = a typical local government body at the district level of Bangladesh, BIWTA = Bangladesh Inland Water Transport Authority, DPHE = Department of Public Health Engineering, PDBF = Palli Daridro Bimochon Foundation (a self-governed micro-finance institution, which aims to eradicate poverty in Bangladesh), EED = Education Engineering Department, HPCCU = Health Promotion and Climate Change Unit, CPP = Cyclone Preparedness Program, RDA = Rural Development Academy, SPARSO = Space Research and Remote Sensing Organization, City Corporation = an urban local body located in the big cities, DoWA = Department of Women Affairs, MoEFCC = Ministry of Environment Forest and Climate Change, BCCT = Bangladesh Climate Change Trust.

6.3. Do International Climate Adaptation Funds Influence State Administrative Traditions?

An argument could be that the central administration consists largely of three layers (Figure 6). From the bottom, the subordinate department/agency, which is working in distinct frontiers from the ministry but under the direct supervision of the latter, implements policy tasks in a particular sector at field level. At the mid-level, the line ministry makes sectoral policy decisions. Several cross-sectoral key ministries are also in this layer of bureaucracy. For example, the Ministry of Finance, Planning and

Public Administration is notable, to which the responsibility for financing, planning in various sectors, and career planning of key bureaucrats is allotted. However, at the very top, an additional layer, namely, cadre-based bureaucracy, plays an extraordinarily significant role in implementing climate adaptation policy (Figure 6). This layer structurally consists of cadre professionals, and each cadre is again divided into general and technical. Among these cadre staffs, the general administration cadre employee, commonly referred to as ‘generalists/elite’ engaging either in a ministry or a department, or at the sub-national level, exercise tremendous power and authority over policy decisions [19,35,76,82]. By contrast, the technical cadre, for example, the forest cadre, can be employed in the department, namely, the BFD, to execute forest-related policy tasks at the grassroots level. Notably, they have limited decision-making power over, for example, allocation of resources and senior staff.

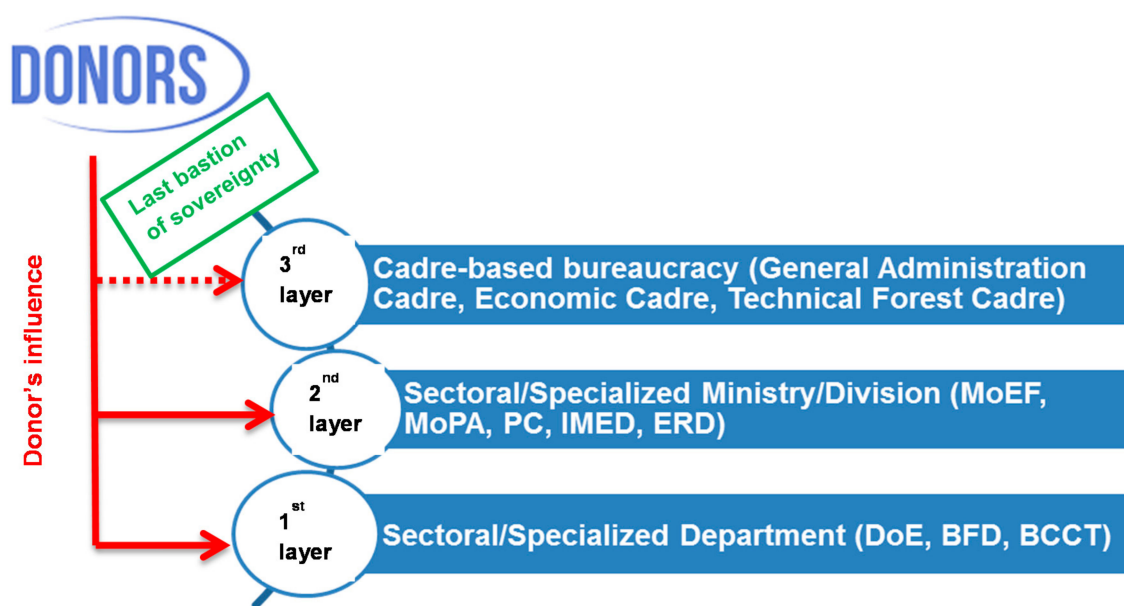


Figure 6. Layering of state administration related to climate change and foreign donor's influences. Note: Here, DoE = Department of Environment, BFD = Bangladesh Forest Department, BCCT = Bangladesh Climate Change Trust, MoEF = Ministry of Environment and Forests, which recently been renamed as Ministry of Environment, Forest and Climate Change, MoPA = Ministry of Public Administration, PC = Planning Commission, IMED = Implementation Monitoring and Evaluation Division, ERD = Economic Relations Division.

In this context, we provide an example to demonstrate the position and power of the ‘elite’ in various hierarchies of adaptation policy-making bodies (Figure 7). The notable organizations are the MoEFCC (decision-making body), DoE (planning and implementing agency), and BCCT (manage the BCCTF). In these organizations, the administration cadre and non-cadre environment/climate change professionals have been engaged to perform adaptation policy-making and then policy implementation. The administration cadre has conquered every position of the MoEFCC (Figure 7), the so-called 2nd layer of the administration (Figure 6). This applies to other sectoral ministries. In addition, they have occupied the superior position (i.e., director general), and several middle positions at the DoE (Figure 7), the so-called 1st layer of the administration (Figure 6). Furthermore, the cadre has retained every position from the top, except for the lowest position at the BCCT (Figure 7). By contrast, the environment/climate change technical members have not obtained any position in the MoEFCC but had medium- and lower-level positions in the DoE. The professionals were also engaged only in the lower hierarchical positions in the BCCT (Figure 7). Notably, these professionals are not included in the so-called ‘cadre’ of the civil service. The dominating position of the general administration

cadre in various climate institutions indicates a strong authority and robust power used formally and informally to influence climate policy decisions.

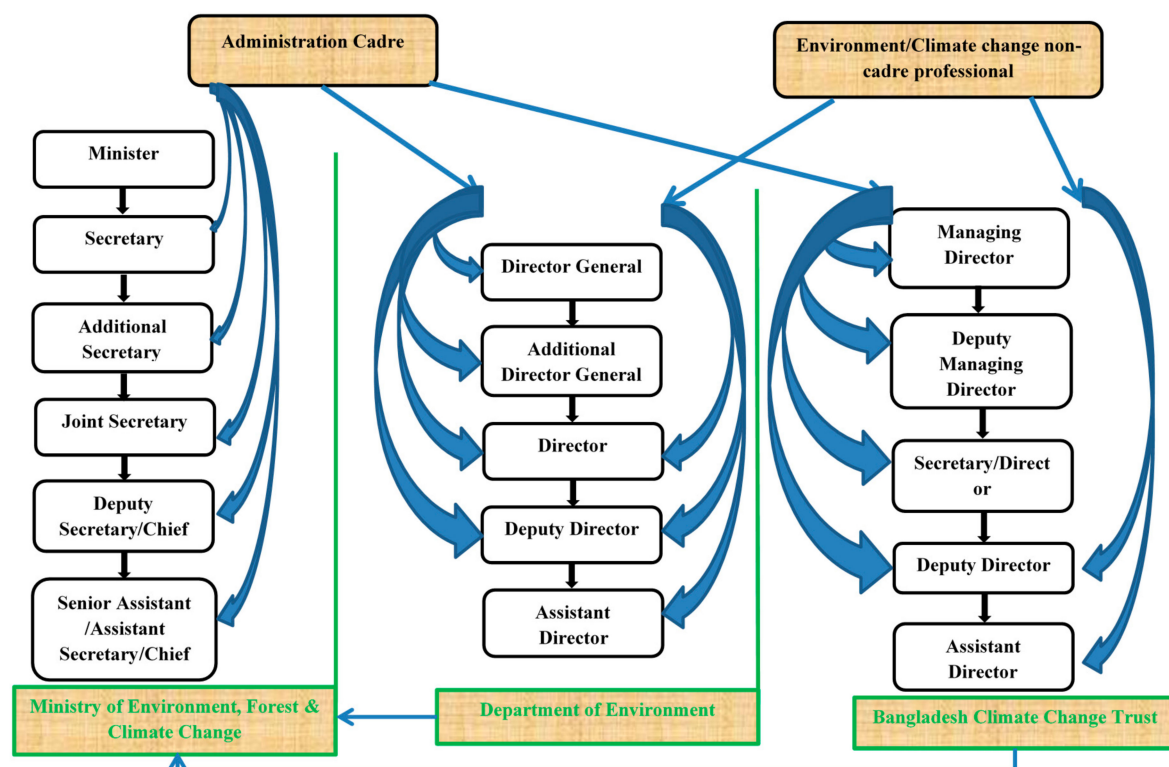


Figure 7. Hierarchical (horizontal and vertical) administrative positions of administration cadre bureaus with big influence in climate related decision-making institutions.

Moreover, our findings suggest that funding from foreign donors is instrumental for implementing adaptation projects, but they are unlikely to fundamentally change bureaucratic arrangements in this regard (Figure 6). We observed that the foreign donors can access and subsequently cause small changes in the 1st layer and 2nd layer of the administrative system. For example, the Comprehensive Disaster Management Program (CDMP), financed by, for example, the DFID, the European Union, and NORAD, has proposed several accepted policy and institutional changes. The program provided finance and other technical assistance to establish a Climate Change Cell in the DoE (CDMP, 2010–2014), which later converted to BCCT. The World Bank suggested establishing a Climate Change Secretariat within the MoEFCC to implement the Bangladesh Climate Change Resilient Fund. Notably, an initiative was taken but the decision was not executed further because of undisclosed reasons. Recently, the FAO (Food and Agriculture Organization of the United Nations), by implementing the project ‘Strengthening the Environment, Forestry and Climate Change Capacities of the Ministry of Environment and Forest and its agencies’, financed by USAID (United States Agency for International Development), provided advisory support to establish a Policy Support and Investment Monitoring Unit (PSIMU)—a permanent entity in the MoEFCC—to ensure EFCC CIP (Environment, Forest and Climate Change Country Investment Plan) implementation, coordination, and monitoring. It is now under the process of approval in the Finance Division.

However, the 3rd layer of the fundamental cadre-based bureaucratic system was untouched and inaccessible by foreign donors. This may, otherwise, be claimed as the last bastion of sovereignty for a sovereign country, such as Bangladesh (Figure 6). This indicates that the basic bureaucratic arrangement and administrative traditions remain unchanged over the generations; in other words, it generates a tradition of super bureaucracy, upon which the successful implementation of climate policy largely depends on.

7. Development Cooperation, State Bureaucratic Politics, and Its Intrinsic Implications on Climate Adaptation Policy: A Critical Discussion

How several policy instruments and bureaucratic politics are utilized within various attributes of international funding and state administration, to shape the climate adaptation policy, is discussed in this section. Regarding development cooperation, for example, in implementing the Climate Resilient Ecosystems and Livelihoods Project, USAID developed coalitions with top state bureaucracies, initially, to comply with formal administrative procedures to initiate the allocation of funds to the country system. By contrast, the donor formed substantial coalitions with international and national non-state actors possibly to access the field (especially, a country's protected area and/or community) and subsequently to implement development initiatives that circumvent state agencies, probably because of gain and/or produce information, by mapping natural resources and peripheral local contexts, which state bureaucracies would be unwilling and/or unable to provide [76]. We also found that from 2004 to 2018, USAID invested US\$45.59 to improve natural resource management and enhance the adaptation capacities of local communities in Bangladesh. Among them, approximately 11% was spent to perform core adaptation and management tasks; however, major funds were contributed to international and national consultancy (approximately 35%), collaboration and networking (approximately 15%), operating costs (approximately 17%), documentation and publicity, and outreach activities [28]. Hence, we argue that the climate-related aid, in many instances, was used more to fulfil the informal aspects than contribute to the core adaptation activities. Within these informal means, the international actors and their 'service providers' shape the spaces for participation, negotiation, and research and for climate policy-making exploiting financial and technical collaboration [83].

The result demonstrates that all those donors that induced policy/administrative changes that have occurred in the 1st and 2nd layer of administration shielded the veiled, exclusive, and elite 3rd layer of bureaucracy and its traditions (Figure 6). The untouched reformation has been reflected in donor's recommendations in the validation reports and project completion reports as a potential obstacle to implementation; however, this brings no practical significance or changes at the end—after project operation. International actors might be potential beneficiaries of the system of persisting elitism in administration. The development actors, in operation, have a prior conception of the powerhouses in the administration. Subsequently, they invest sufficient attention to that power administration, create coalitions, consult with them, and convince them through formal and informal discussions before adopting a policy program. Much of this cooperation, concession, and conciliation occurs at the top level among development actors for launching and performing unhindered operations in a recipient country. Notably, some negotiations are straightforward. For example, the development actors must go through the Economic Relations Division and concerned line ministry (e.g., MoEFCC) to sign the initial agreement for operating climate projects. The rank-in-generalists of the aforementioned agencies play the decisive role in these negotiations. Although representation from the respective technical departments under the leadership of the line ministry creates some spaces for participation in the negotiation, given the intensive technical magnitude of climate adaptation dogma, the insufficient time-space to scrutinize the project documents, and the prevailing antiquated generalist dominions doctrine, this involvement does not support them effectively because, according to Agarwal (2001), this can lead to 'participatory exclusion' of the lead technical agency and its technicality in programmatic actions, which oftentimes creates conflicting interest and execution barriers on the ground [83,84]. Their prescriptions and interventions on climate policies might result in positive changes that help fulfil international compliance and western viewpoints; however, outside these contexts, the technocratic and top-down approaches often do not result in innovation and restrict sustainable operation, which has little impact on the ground [3,83,85].

Furthermore, any change in the administrative system might not ensure substitutes in the mode of operation. For instance, very recently, the Ministry of Environment and Forest was renamed the Ministry of Environment, Forest and Climate Change, incorporating a new brand 'Climate Change Wing' at the ministry. Compared with decentralization, recentralization is concentrated at the ministry

level through the addition of, for example, a generalist administrative workforce, ‘rank-in-corps classification system’ [19], and covert and overt logistics. However, does this customization result in adaptation innovation? Or maybe, this simply refers to ‘old wine in a new bottle’—a politic of influential bureaus to proliferate their power and interests over climate policy—and offers deliberate scrutiny and rigorous discussion in further research. However, in Indonesia, global climate politics [i.e., REDD+ (Reducing emissions from deforestation and forest degradation) governance arrangement] contributes to the development of autonomous capacities and reliable procedures in a limited scale, though, the effects which were conceptualized as an increasing rational-legal bureaucratization [86]. National and international climate bureaus and their allies are a dynamic partner of customization because this process and their coalition paradigm may create suggested means to facilitate financial transactions aiming to serve either formal development goals or informal organizational interests [87].

Public sector policies are designed, operated, coordinated, and monitored by the supreme bureaucracy [19]. However, the question is whether such a bureaucratic tradition effectively contributes to implementing climate adaptation policy. A sizeable body of literature has shown a gap between climate policy outputs (i.e., policy measures adopted) and the manifestation of the intended policy outcomes and impacts [76,83,88]. The administrative traditions suggest that such bureaucratic actors operate according to specific routines and with a rigid administrative framework [18,21], and climate adaptation requires the implementation of innovative policy instruments and needs ‘new’ policy—new priorities, new ideas, and new departures [22,23] and, most importantly, should devise how new policies should be implemented [89]. In adaptation policy, the policy experts must have technical knowledge and scientific understanding of the realities of biophysical change, social dynamics, and the vulnerability of the individuals on the ground [83]. Scholars have suggested that the deeper social, political, and environmental determinants of adaptation policy must be underscored in policy action [84,90]. Biesbroek et al. [84] argue that the success of climate adaptation may depend on governance actors’ roles, values, interests, and ideas; and what actors interpret and give meaning to regarding events. The administrative traditions bring the member of general administration cadre to the fore (in the 3rd layer in Figure 6); however, a general lack of technical expertise because of more general backgrounds and working experiences are affected by a regular personnel rotation among the ministries and in departments, which results in a loss of institutional memory and further hampers the bureaucratic capacity to overcome policy problems [3,35,91].

International actors sometimes offer training and outreach activities for stakeholders; however, these actions have not achieved their intended impact because of the lack of sustainable practice. Recently, the FAO, for example, provided ‘climate capacity’ training through the ‘MoEF Support Project’ to many ministry officials; however, some of them have already been moved or will very soon be transferred to other ministries that oversee another sector or policy area. Thus, continuity in knowledge production has seriously been hampered and may thus hinder policy implementation [19,35] because climate policy demands updated information and continuous knowledge production. If governance actors have no in-depth knowledge and understanding of the concepts and contexts, and causes and consequences, of climate adaptation, how they will make effective policy decisions? Notably, their specialized training and work in public administration assist them in being experts on general procedural matters; however, an adaptation portfolio demands in-depth adaptation (technical) knowledge, which probably is not contained therein.

This would direct the values and interests of governance actors to focus more on general procedural and routine activities, for example, the ‘postal type’ of works rather than problem investigation and innovating policy framework to address climate adaptation complications. This could carry the morals and interpretation of policy actors over an inert, ex-post, and realist form of adaptation policy response, ‘obstructing civic engagements in public affairs’ [19], which ultimately might generate ‘administrative inertia’ towards issue-based policy solutions. According to Peters, overall, this system produces a civil service composed of ‘talented amateurs’. A system ‘that kept the technical personnel “on tap, never on top,” even in departments whose subject matter is highly technical’ [17].

However, exception was observed for some departments, including the water sector, whose functionality are solely technical in nature. In this sector, the technical professionals (e.g., Water Engineer) have been playing the key role in designing and implementing climate adaptation activities. Here, instead of general administration cadre, this sectoral professional lead the project as they have the expertise, various information power and implementation means in implementing the respective engineering tasks because bureaucratic actors need to have suitable policy instruments and power capabilities in hand in order for creating influence and executing policy tasks at the field [17,20,22,23,92]. In addition, since, the sector deals highly technical works (e.g., protection of river bank erosion, dredging river, construction of embankments), the general admin's rules of procedural works do really mismatch with them. Moreover, the sector is highly important and delicate in such a case study country, in terms of its vulnerability to natural disasters and climate change, wherein admin bureaucrats would like to be risk averse because decision actors tend to take action that is less risky [12].

On the other hand, the result finds no influence from foreign donors for policy and administrative changes in this water sector. The result also shows that a total sum of US\$3262.63 million (ADP based funding is US\$2895.3 million and BCCTF funding is US\$367.33 Million) has been invested in the study period, of which US\$567.6 million is donor funded. That means, only 17% fund was donor funded, of which 97% is loan and only 3% is grant. Grant money is widely regarded as a source for creating influence and serving informal interests in a sector [25,53]. Therefore, donor has practically no influence and informal interests in this sector. That is why, this sector is successful, in terms of holding power instruments and utilization of funds, in implementing adaptation policies. However, how far their work has been successful on the ground is beyond our discussion, which could be a potential area of future research work.

Considering the stated generalist-based policy perspectives, questions may arise, for instance, would policy process and tools (e.g., policy design, policy direction and implementing instruments, coordination, negotiation, monitoring, evaluation) be sufficiently supported by technical/scientific criteria and international standards, on which successful policy implementation largely depends on? Further empirical research may provide concrete answers to this question. However, because of the intensive international, emerging polycentric climate governance and the high level of technical experts devoted to climate action at the international level, governance units should probably attempt to adopt the optimum adaptation policy mix that reflects the prevailing scientific/technical, economic, and regulatory wisdom [1,20,24].

The cadre system, consisting of some 27 topical cadres, such as public administration, customs, agriculture, and forests, is a huge government recruitment and staff-positioning system which remains invisible to empirical researchers with limited insider knowledge. Informally, clear hierarchies exist amongst the different cadres, with the public administration cadre dominating. Consequently, any customization of ministerial rather than cadre bureaucratic powers and structures will hardly be able to influence domestic policy in meaningful ways. A lack of institutional memory and sectoral technical knowledge, as well as a dearth of consistency in operation of admin bureaus, may hinder effective handling of the climate issue [35]. In order to innovate specialization in the climate administration, ministries which are dealt with similar administrative and functional policy issues (climate adaptation issue) could be clustered and accordingly, respective cadre bureaucrats could be posted therein for a long-term basis. The bureaucrats, at best, could be transferred among the ministries clustered. This may ensure continuous knowledge production and innovation in one hand. On the other hand, it may facilitate coordination and flow of information among the climate bureaucrats.

Additionally, changes could be made to minimize the layering consisting of too many organizations and cadres (e.g., cadre-non cadre/ministries/divisions/departments), and hierarchical power structure in the administration (see Figures 6 and 7). This sort of duplication of powers and dispersion of power elements among so many diverse bureaucracies through "agencification", in turn, may produce direct/indirect side effects, such as duplication of tasks, delaying the implementation due to heavy

procedural and unnecessary corresponding/communicative paperwork, overburdening with “Postal Type” of works, especially at lower hierarchical level, and impeding flow of right information at right time [93–95]. When the interests and power of two or more agencies overlap, it may result in conflict among them over certain policy issues [95–97], because according to bureaucratic politics theory, bureaucratic actors want to maximize their powers and resources in the administration [66,98]. Moreover, because the role of individuals in the institutional apparatus matters [99], a one-size-fits-all approach to climate adaptation policy might be redefined and transformed towards a more general-technical co-existence and fusion of ideas at the top level of decision-making.

8. Conclusions

We could argue that the administrative bureaus’ responses, guided, and fueled by domestic politics made up by various organized protectionist stakeholders, to any policy change, apply not only to Bangladesh but to any country, developing or developed; and technical departments and experts are much more flexible regarding any recommendations for any changes, both policy and administrative, because they fully know their problems experienced daily at all their work sites. The latter tends to be much more concerned with the substantive and technical impact of such policy and administrative changes on the problems confronted by them, and the former maintains their traditional values and social standing in the country, in addition to their self-pride to the extent of maintaining status quo.

Additionally, external funders, bilateral and multilateral, also have axes to grind, not infrequently to ‘impose’ their values and management structures in the name of improving the efficient use of their external and even domestic funds to which they are often committed to procuring those funds from their respective ministries of finance, national parliaments, and intergovernmental decision boards. They know full well that a better understanding of and some sort of adaptation to local administration and management values and practice are essential to effectively use of their external funds and obtain the expected results; but alas, they, too, are short-sighted and want to observe their ‘good’ results even superficially. In summary, this offers limited technical inputs or mutual exchange of technology and knowledge sharing and sustainable operation in climate policy-making and implementation.

Thus, there must be a middle-of-the-road approach to any use of domestic and external funds for whatever objectives, in the application of climate adaptation policy and financing or otherwise. Each sectoral ministry within the developing country and donor country and international organizations must find such flexible approaches to obtain the maximum cross-sectoral benefits of priority policy and policy-based funding, such as that for climate adaptation, instead of adhering to their respective values and practices. Ultimately, the policy changes and funding for policy changes must be known. They are installed for the development of those individuals currently suffering or subject to such suffering from climate change, whether in the form of droughts or floods, and taxpayers in developed countries and partner countries are pleased if their taxes paid to the respective governments are efficiently used, reducing the suffering of the individuals in partner countries.

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Appendix A

Appendix A.1

The Annual Development Program (ADP) is the government planning document prepared for a single fiscal year, which lists an array of development projects for different sectors together with brief funding arrangements [42].

Appendix A.2

This specialized fund (established in 2010) is provided by the government's domestic sources to implement climate-sensitive activities, particularly adaptation activities in Bangladesh.

Appendix A.3

The cadre is the characteristic functional subdivision of public bureaucracy [100], which is established under law with a predefined position and structure, and recruitment and promotion rules [101]. There are two types of cadres in the Bangladesh Civil Service (BCS), general cadre and technical cadre. Former cadre employees qualify through an exam, comprising subjects related to a broad range of general affairs (e.g., general Bangla, general English, Bangladesh affairs, international affairs, mathematical reasoning and mental ability, and general science and technology). An applicant holding at least a bachelor's degree with any subject background can apply for a position under the general cadre. By contrast, the latter pass an exam, where at least a portion of the exam is based on their professional field, in addition to the field of general affairs. Here, an applicant holding a minimum of a bachelor's degree with a specialized subject background related to the post can apply for the position of that cadre. For example, an applicant from the field of agriculture can apply for the position of BCS Agriculture. However, the same applicant can also apply for the position of general cadre (e.g., BCS administration cadre). These officials, by law, are very much independent regarding interchanging their position within various line/cross-cutting ministries, sub-national levels, and often with other departments or agencies by deputation.

Appendix A.4

We selected 20 experts from the relevant ministries, who were responsible for the approval, planning, management and monitoring process of development projects. The ministries selected were the Ministry of Environment, Forest and Climate Change, the Ministry of Agriculture, the Ministry of Water Resources, the Ministry of Disaster Management and Relief, the Ministry of Food, the Ministry of Fisheries and Livestock, the Ministry of Health and Family Welfare, the Ministry of Planning, the Ministry of Power, Energy and Mineral Resources, the Bangladesh Forest Department, the Department of Environment, and the Bangladesh Climate Change Trust. The lead author conducted the interviews from June to July of 2015, from July to August of 2016 and June of 2018. The interview modes used were personal and phone interviews. The experts were asked to identify the relevant climate change adaptation projects. For example, the lead author asked a development expert working in the Ministry of Agriculture to provide the names of climate change adaptation projects as described above in the two tables. In this way, he obtained the project titles such "Transfer of Technology for Agriculture Production under Blue Gold Program." The experts were also asked to give a preliminary idea regarding corresponding funding projects, in which we may trace the link between donor's funding and administrative changes.

Appendix A.5

The first author of this study is a civil servant with experience working in the planning and development section of a line ministry—including the Ministry of Environment and Forests—since 2005. During his work at the 'desk level' (where potential solutions are proposed, based on investigations),

he was involved in planning, adopting, monitoring, and negotiating processes related to development projects funded by the domestic government and foreign donors [27]. This ‘going-back approach’ [102] added value to this research in regard to understanding the context, permitting privileged access to expert networks, project funding sources, and subsequent critical analyses.

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