International and Domestic Sustainable Forest Management Policies: Distributive Effects on Power among State Agencies in Bangladesh

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Abstract: The last two decades of forest policy discussions have been dominated by calls for sustainable management of forest resources. Consequently, multiple international and domestic policies, supporting sustainable forest management (SFM), have evolved in numerous jurisdictions. Policies in developing countries often rely on foreign donors' projects, which supplement domestic SFM policy. These policies assign various policy tasks to specific public bureaucracies, who then compete for these very tasks, as well as the related staff and budgets. Therefore, project and policy task assignment greatly influences bureaucratic power. This article analyzes the distributive effects of SFM policy on power (in terms of coercion, incentives and dominant information) among relevant domestic and foreign donor bureaucracies in Bangladesh. Concepts from *power theory*, *bureaucratic politics* theory, and concepts of *policy and policy process* were combined to analyze 121 Bangladeshi SFM policies from 1992–2013, which assign a total of 1012 policy tasks to specific public bureaucracies. Using qualitative content analysis, inferences about power were assigned to specific competing bureaucracies by the totality of SFM policies made. Results identify domestic and foreign bureaucracies whose power distribution benefit most from the SFM policies *viz.* their competitors. It is concluded that bureaucracies gaining the most power set the limits and directions in designing, implementing and evaluating various elements of any national SFM policies.

Keywords: domestic bureaucracies; foreign donor bureaucracies; power changes; policy analysis; power elements; Bangladesh

1. Introduction

In the aftermath of the 1992 world summit on environment and development in Rio de Janeiro, calls for the sustainable management of forests around the world gained momentum [1,2]. This is true for a large number of countries, as well as international debates on forests within international organizations and fora. As a result, the number of policies addressing forests and support for their sustainable management were formulated internationally, at global and regional levels [1,3–10], as well as domestically at national and sub-national levels (e.g., [11,12]).

In industrialized countries, such policies often focus on productive sectors, with administration and implementation by well-established and equipped public bureaucracies [12,13]. In contrast, policies on sustainable forest management (SFM) in developing countries often face the challenge of being perceived as an overall hindrance—specifically within agricultural development—as well as challenges related to a lack of funds for the pursuit of SFM policy development [14–17]. Hence, domestic bureaucracies often ally with foreign donors from industrialized countries in the interest of either domestic or international SFM policy development [11,17].

In Bangladesh, forest policy is especially dependent on international donors' projects due to the forest sector not being a viable economic field. This is mainly due to a general ban on logging for industrial and commercial purposes since 1990 to regain forest cover within the natural forests [18]. As a consequence, the country has no effective forest management plan, and frameworks of criteria and indicators towards fulfilling the goals of SFM [19,20]. It is also believed that a lack of adequate funding is an impediment to planning and implementing SFM policies in Bangladesh. Here, the role of SFM funding by external donors through projects is an essential part of the country's policy towards forest management [18]. Furthermore, the role of national bureaucracies is vital in designing and implementing various elements of SFM policies in Bangladesh. As a consequence, SFM policy in Bangladesh consists of a number of domestic public policies, including relevant projects induced by domestic government and international donors [11]. Within this policy, a large number of tasks are assigned to specific bureaucracies. These may include tasks related to formulating policy in greater detail in operational terms, to implementing parts of policy in specific contexts, and to monitoring progress towards greater policy goals [21].

Following bureaucratic politics theory [12,22–24], these public bureaucracies compete for power and resources such as budgets, staff, and political responsibility for policy issues and tasks. In assigning detailed policy tasks to specific bureaucracies, some bureaucracies will gain in power resources, while others might lose or gain less than others [25,26]. Consequently, assigning the tasks of a particular project and policy to a bureaucracy has a great influence on its power. In turn, assigning specific policy tasks to specific organizations has a strong influence on the limits and directions of these policies, since bureaucracies will implement and redefine the policy according to their organizational interests [13,23,24]. This is true especially for detailed administrative practices and evaluation procedures [27]. This article therefore analyzes the distributive effects of SFM policy on the power of relevant public bureaucracies in Bangladesh. It seeks to analyze which bureaucracies gain power based on nationally and internationally induced SFM policies using Bangladesh as an example.

The following section will outline the study contexts followed by the theoretical concepts and basic assumptions used within our analytical framework. Section 4 details the methodological steps taken in achieving the goal of the study, and Section 5 will present the results produced, which are then discussed and concluded on in Section 6.

2. Study Contexts

2.1. SFM Policy: Global and Domestic Context

Over time, international forest instruments have been developed with a focus on the enhancement of SFM in order to attain socio-economic benefits, while maintaining ecosystem values and services from forests ([1,2,4,9,28], on SFM in detail e.g., [29,30]). International forest governance has certainly shifted over time to address emerging priorities (such as the issue of SFM), which have shaped and reshaped views on forest related policies [31]. These issue-based, forest related, domestic policies are developed through international influences [32,33], especially due to their capacity for providing financial resources [17]. Domestic influences do, of course, also contribute to this development.

The Rio Earth Summit in 1992 galvanized the precepts of sustainable development and SFM as widely accepted paradigms for natural resource management and protection [34,35]. In this regard, "The International Conference on the Contribution of Criteria and Indicators for Sustainable Forest Management: The Way Forward (CICI-2003) harmonized the seven common thematic areas (see Figure 1) on all national and international levels [36–39]. Additionally, the Non-Legally Binding Instrument on All Types of Forests (United Nations Forum on Forests (UNFF), *i.e.*, forest principles) acknowledged this as a reference framework for reporting on SFM [36,37,40]. Successively, a number of policies and projects were adopted in Bangladesh relating to SFM for improving forest resources. This research deals with such initiatives, some of which are implemented at a national level (e.g., National

Forest policy 1994, Social forestry Rules 2010), and some of which are influenced by international foreign donors (e.g., Forest Resources Management Project 2001, Forestry Sector Project 1998 [41–43]).

Figure 1. Thematic Elements of Sustainable Forest Management (SFM) at the Global Level (adapted from FAO, 2004 [36]; ITTO, 2012 [37]).

A globally discussed SFM issue (consisting of national and international SFM policies) was selected, which had already been identified elsewhere as an important international forest-related issue in Bangladesh [44]. Additionally, experts had highlighted this issue as being of current importance in both national and international forest policy affairs, making this a widely discussed key issue in international forest regime literature (e.g., [1,3,7,45]). Singer [46] shows the interaction of international forest regime and national forest-related policies. Bernstein and Cashore [33] inform us of how global governance systems influence domestic policy making processes. Giessen [5] argues that the international forest regime (IFR) is very much complex and fragmented. Although much work has been published on regime effectiveness and related politics [3,13,33], issues specific to national-level policy implications—particularly the question of which state institutions benefit from domestic policy changes when analyzed against changes in power—have rarely been explored.

The state bureaucracies' role in policy making and policy implementation is vital, especially for the forestry sector in Bangladesh. Sixty-five percent of the total forestland in Bangladesh is owned and managed by the Bangladesh Forest Department (BFD) [47]. State administrations in developing countries—the forest agency being no exception in Bangladesh—have been developed into highly centralized, bureaucratized, formalistic and authoritarian systems of management and policy practices [48,49]. Foreign donor bureaucracies, on the other hand, play a major role in policy changes by providing financial and technical aid in Bangladesh [17]. Therefore, the involvement of donors and counterpart national-level bureaucracies is expected to be much more important since they are most likely to engage in designing and implementing SFM policies in Bangladesh. Therefore, we considered state bureaucracies consisting of both the national (*i.e.*, ministries, departments), and foreign donor bureaucracies for our analysis.

2.2. Sustainable Forest Management in Bangladesh

Bangladesh has a total 2.52 million ha of forestland, of which 1.52 million ha is managed by the state forest department, and 0.73 million ha consist of unclassified state forests, administered by the district commissioners [18]. Bangladesh has very low levels of forest area per capita (0.009 ha), compared to average values in Asia (0.145 ha), and the world (0.597 ha) [19,50]. In response to deforestation, the country has shown some positive progress reducing the rate of annual deforestation from 2.1% from 1960–1980 [20] to about 0.2% from 1990 to 2010 [19]. The objective of the forestry sector was much oriented towards fulfilling consumer's forest products demand in the British Colonial period, and immediately thereafter [18]. However, during the last two decades, the importance of the forestry sector has increased as a changing aspect of climate change, biodiversity conservation, and community—based forest management policies in Bangladesh [44].

Bangladesh has also changed institutional settings, and forest management practices that could be linked to the implementation of the proposals for actions of the Intergovernmental Panel on Forests (IPF), and the UNFF's plan of action [43]. Over time, the country has submitted several reports on SFM implementation status to the UNFF Secretariat [43]. A number of policies and projects were implemented in Bangladesh for improving forest resources and bringing institutional changes within the forestry sector. These initiatives are contributing towards achieving SFM [43]. The latest policy, the Forest Policy of 1994, has indicated a commitment to SFM (BFD 2013b). The number of protected area has been increased in the country. At present, there are 17 National Parks, 21 Wildlife Sanctuaries, 12 other conservation sites [41], and 12 ecologically critical areas [51] declared by the Ministry of Environment and Forests (MoEF) following the direction of the National Forest Policy of 1994. The relevant portion of which states that "Attempts will be made to increase the amount of the protected area by 10% of the reserved forest land by the year 2015" [41,44]. The present protected area covers 10.72% of the total forest area, achieved by 2015 [41]. In addition, Bangladesh has signed the protocol of the "Regional Initiative for the Development and Implementation of National Level Criteria and Indicators for the Sustainable Management of Dry Forests in Asia", but the Criteria and Indicator is yet to be developed [20]. The Forest Department has become a participant in a regional project on "Strengthening Monitoring, Assessment and Reporting in Sustainable Forest Management in Asia" (MAR-SFM), in collaboration with the Food and Agriculture Organization of the United Nations (FAO), and has established a national network for monitoring, assessment and reporting for SFM in Bangladesh [43]. The MoEF, BFD, Department of Environment (DoE), Ministry of Planning, and Ministry of Finance are among the important state bureaucracies in the field of SFM in Bangladesh. However, foreign donor bureaucracies, given their finance and technology, also play a crucial role in Bangladeshi SFM policy process [44].

3. Conceptual Framework

3.1. Bureaucratic Politics and Actor-Centered Power

In a given area of issue, the political decisions made are the result of bargaining, negotiations, and related politics—mainly amongst competing bureaucracies [22,24,27,52,53]. The term "bureaucracy" refers to public organizations, ministries, departments and agencies [22], which make decisions on specific problems, based on legal standards [22]. The bureaucracy may be a state, domestic or foreign actor [12]. The donor is considered a foreign state bureaucracy with the assigned task of development and co-operation through bilateral, bi-governmental, and multilaterally implemented aid measures [44,54]. An important question, however, is why they support some policy changes, while remaining silent on, or overlooking others (e.g., decentralization of forest resources management) [55]. Furthermore, the role and influence of donor bureaucracies wielding significant resources alongside specific intentions—thereby shaping and reshaping national and local institutions and outcome [56].

The interests of bureaucracies consist of formal goals for carrying out their public mandate [23,57], and of informal organizational goals in surviving and expanding organizational interests, such

as maximizing power, budget and staff [26]. Informally, the bureaucracies in an area of issue compete with one another for resources, political domains, and influence [24,58,59]. In order to accomplish any set goals, they can act as political institutions and administrative bodies [12]. As political institutions, bureaucracies are furnished with legitimacy, public mandate, financial and staff resources, and as administrative bodies, they have expertise and information, administrative ideologies, decision-making power, alliances, permanent position and a disregard for politics [12,16,26]. Some of these elements, for example: the "legitimacy" of a bureaucracy in the policy field, largely follows the transfer of specific powers over various resources and policy-making. High legitimacy, in turn, may increase the ease of applying any of an actor's power elements in achieving a policy goal. In this process of attaining any goal, however, they experience competition and sometimes form coalitions. Consequently, based on different preferences and power competencies, they shape policy outcome, to a great extent [13,15,52,57]. Here, competing national and international bureaucracies, on the basis of organizational interests and preferences put effort into maintaining or increasing their responsibilities within the process of national and international policy affairs in an issue area [20,22,57–60]. Therefore, the policy changes are greatly influenced by the interests and formal tasks of bureaucracies, which reveal the struggle for power among relevant state institutions in a given area of issue [5,58,61].

Power is a key factor in forest politics and in scientific analysis that studies the interests and behaviors of actors on certain issues aimed towards achieving any policy goal [12,62]. Some scholars argue that power is very much actor-oriented [63], while others believe power is situated, rather, at the level of structure [64,65]. For example, according to Dahl [66], power is relative, and is comparable between two or more actors. Furthermore, Lukes [67] argues that power can be exercised in three dimensions: power over decisions, power over non-decisions, and power over political agendas. Correspondingly, Krott *et al.* [62] mention that actor-centered power focuses on the relevant acting agents and organizational power. Additionally, the authors link structural power with actor power by defining the former as a power source for actors to draw on. According to Rowe [68], the competencies the actors may hold influence the outcomes of a given issue—and it may be for instance knowledge and expert authority or material wealth/donor status, or the possession of forest resources. This allows the "player to play the game more or less successfully" in public policies [68]. Consequently, Krott *et al.* [62] developed actor-centered power which is closely linked to Weber's (2000) definition of power as the "probability that one actor within a social relationship will be in a position to carry out his own will despite resistance" ([62], p. 36). This concept is connected to the Etzioni's [69] threefold typology of power (*i.e.*, coercive, remunerative, and normative). Here, the author argues that Weber's concepts on resistance and threat of power can be measured by examining actors' resources and instruments, which are treated as the power elements of actors by Krott *et al.* [62]. The authors linked the elements to observable facts, and categorized actor power and elements an actor might possess into three classifications: coercion, (dis)incentives, and dominant information. Here, the observable facts are linked to obvious action, threat of action, and sources of action, which are considered to be the possible sources of power. These elements might be attributed to one actor, or distributed among a number of actors, which is echoed in the policy tasks assigned to specific actors by policies of a given country [16]. Below (Table 1) is a brief description of each element.

These three kinds of power elements are employed to analyze the power changes among public bureaucracies, based on the tasks of SFM policies in Bangladesh. Therefore, actor-centered power provides an analytical tool to identify power sources or instruments used by a particular actor to accumulate their power [70]. These power elements convey a specific social relation, wherein there is present a potentate, and a subordinate—linked to observable facts including sources and threats of action [62,71]. The sources of power of these three elements are specific and observable, and offer the opportunity for collecting empirical data [62,71]. The actor-centered power approach, which is used in this research, has already been tested within several cases in Nepal [72], Indonesia [73], Namibia [74], Germany [75] and Cameroon [76]. The observable facts or sources of action are labeled best in a policy

program, by way of allocating the tasks among the relevant bureaucracy. Below is a description of each power element.

Table 1. Definition, observable facts and example of power elements.

Element	Definition	Observable Facts	Example
Coercion	Altering behavior by force	Physical action, threat for physical action or sources for physical action	Removal of forest user rights
(Dis-)incentives	Altering behavior by (dis-)advantage	Providing of, or threat with, sources of material or immaterial benefit or impairment	Financial support from donors to carry out forest management plan
Dominant information	Altering behavior by means of unverified information	Providing of, or threat with, sources of unverified information	Expert knowledge about how to conserve protected areas through co-management

Adapted from Krott *et al.*, 2014 [62].

Coercion is defined as "altering the behavior of the subordinate by force" ([62], p. 37). The state is the principal actor of implementing force supported by laws, acting through the formal power network of actors (e.g., bureaucracies) [62]. The law provides the bureaucracy with a mandate of control, and the possible application of sanctions for those who disobey them. These rules, however, are indicative of the use of force acting upon the aspects of the forest, encouraging their importance to achieving policy outcome [62]. Accordingly, the approval of a policy document, or sanctions related to the decision making of an actor, is considered to be the sources of coercive power elements.

(Dis)incentives refer to "altering the behavior of the subordinate by means of disadvantages or advantages" ([62], p. 38). Sources of materials (e.g., all money and technical sources—such as machine, plants or food and even support in labor), by way of incentives or disincentives, create opportunistic preferences for specific actors based on which policy decision is made [62]. Therefore, an actor who has been provided with sufficient sources of incentives as an implementation means towards achieving a forest goal, he/she belongs to that power.

Dominant information is an important element of power since an actor without valid information cannot make appropriate decisions [26]. Dominant information refers to unverified information through which decisions are made (ibid). If the subordinate is unable to check information due to lack of confidence, lack of time, paucity of knowledge or have simple trust, he/she is exposed to the power of the dominant authority [72,77]. State is considered to be the principal source of information elements. Such information power could be made unavailable to the public, or unwillingness to share this could be used to increase the bargaining position of the agency responsible for it [26]. In this context, expert knowledge of an actor, for instance, which is essential to formulate and monitor any plan and policy, can be treated as informational elements of power. Thus, it is generally believed that state has the capacity to produce such information to which other actors could largely rely on.

3.2. Policies and Policy Process

3.2.1. Definition of Policy and Project

Policies are defined as planned action adopted or proposed by an organization or individual, and which is intended to address a problem [21,78]. Forest policies are defined as: (i) forest-focused policies—formally and explicitly addressing forests as a primary issue; (ii) forest-related policies—as a secondary issue; or (iii) forest-relevant policies—not addressing forests formally and explicitly, but having empirical relevance for forests on the ground (similar [79]) (see Figure 2). This research considers forest-focused and forest-related SFM policies. Projects led by government and foreign donors in this study are treated as policies in the above sense. This is appropriate, as projects (specifically development project aid by donors) were found to be an important part of Bangladesh forest policy changes [17]. Moreover, Sadath and Krott [18] considered extra financial investments, regulatory

instruments, and informational instruments as policies to analyze Bangladesh forest policy changes. In addition, for developing countries with limited state capacity, development projects contribute significantly as sources of major policy instruments. Hence, SFM policy in Bangladesh combines domestic public SFM policy with domestic government and foreign donor induced SFM projects.
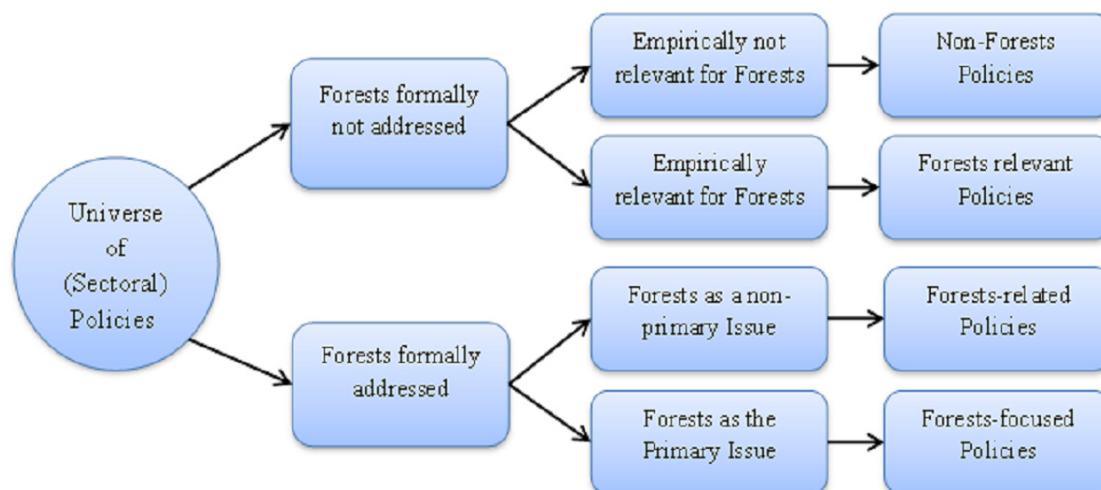

Figure 2. Typology of forest and non-forest policies.

3.2.2. Policy Process and Strategic Tasks

A central focus forest policy serves to solve pending issues [12]. These issues are determined via three problem-solving phases that represent a logical sequence (ibid). In well-established policy fields or programs, these phases coincide—simultaneously dealing with individual issues, but with a varying intensity [12]. The policy cycle comprises firstly of policy formulation, which determines the issues to be resolved and standardized solutions in the form of programs; secondly of policy implementation, which entails the practical application of formulated programs to the issues; and thirdly of policy evaluation and monitoring, which assesses the formulation and implementation of a program ([12], similarly see [80]).

Every policy establishes certain tasks and assigns them to a specific actor (*i.e.*, bureaucracy). A strategic task for one bureaucracy consists of tasks on each of the three problem-solving policy cycles under distinctive policies. Strategic tasks correspond with what Schusser [74] and Krott *et al.* [62] call "power features." Hence, the strategic task in a given policy program is the most important, and consists of formal avenues that appropriately correspond with the power of a specific actor in a specific sector. The "strategic task" was selected as one power source based on the belief that every task should be equipped by another source of power (e.g., budget, staff, exclusive information, *etc.*) (similar to [26]).

Following its objectives, this paper attempts to make visible the power possession of domestic and foreign donor bureaucracies—resulting from the national as well as international SFM policies, arriving at the propositions mentioned below and based on the aforementioned concepts.

3.3. Propositions

(1)   Domestic bureaucracies, as well as foreign donor bureaucracies, may gain or lose power due to their assigned tasks resulting from the SFM policies.

(2)   Domestic policy assigns strategic tasks to these bureaucracies, which add specific power elements such as information, incentives, or coercion to a bureaucracy's power.

(3)　The resulting power dynamics, as well as the different bureaucracies' equipment with specific power elements, are important factors as these set the limits and directions in which domestic SFM policy will develop.

4. Methods

A mixed qualitative–quantitative research technique was employed for this study. The research follows the path of a full quantitative survey of all existing policies and projects relating to SFM and a qualitative assessment of strategic tasks assigned. The policies and projects selected cover the period of 1992–2013, given that in Bangladesh, major forest policy changes took place just after 1990 [17,18]. Consequently, an identifiable, international forest regime emerged after the 1990s [1]. SFM policy, however, refers to any intended action by an actor relating to forest management issues, to the benefit of specific societal groups or society at large. The policies and projects were carefully chosen based on this SFM policy definition, forest policy definitions (see Section 3.2), and the internationally accepted thematic elements of SFM (see Figure 1). Any objectives and main activities of the policies and projects, which mismatched the above definitions, were excluded from the eligible sample. In doing this, government gazettes, acts, rules, policies, administrative orders, and such formal documents as reports, master plans, and circulars are all considered to be policy documents (*cf.* [18]). All policy documents were collected from the Bangladesh Forest Department (BFD)'s library, the Department of Environment (DoE)'s library and personal communication within an expert circle and the administrative staff of respective agencies in February and March 2014—all of which are responsible for planning, policy making and policy implementation on SFM issue in Bangladesh. For example, the Ministry of Environment and Forests (MoEF), the BFD, the DoE, the Planning Commission (PC), *etc.* In addition, all government projects related to SFM included in the Annual Development Program (ADP) (the 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 [17]) were considered. Therefore, project data was collected from the reporting documents of the MoEF and the ADP documents of the PC library through personal communication during February, March, and December 2014. Moreover, websites for important state agencies (e.g., MoEF, BFD, DoE, *etc.*) and donors (e.g., United Nations Development Programme (UNDP), Asian Development Bank (ADB), World Bank, *etc.*) were searched to collect the relevant policy and project data.

Accordingly, we found a total number of 121 eligible policies. Each policy was analyzed employing a qualitative content analysis method and the strategic tasks were identified- as were power elements resulting from these tasks, the assigned bureaucracy connected to the task, and the policy year (*cf.* [26]). These were further analyzed using Microsoft's "Excel" and "R" software. An example of the policy analysis based on power elements is attached in Appendix A. All identified strategic tasks were categorized into types of tasks, provided in Table 2. In the following analysis, all strategic tasks observed were treated as being equally important. From the analyses, the power distribution of individual bureaucracies, based on the aggregate power elements, and gain or loss of power by bureaucracies over the years was found.

This paper's third author's professional network inside the bureaucracies facilitated access to expert networks, privileged access to policy and project sources, and subsequent analysis—particularly in checking the roles of relevant agencies accompanying the policy documents. The third author is a professional bureaucrat and has experienced working with the Ministry of Environment and Forests and the Ministry of Food from 2005 to 2015 in Bangladesh. During his work tenure, he was directly associated with planning, processing, approval, and monitoring and evaluation, mostly of these development projects and policies. This "going back-approach" (*cf.* [81]) of the author may add value to this research, through understanding of the context and subsequent critical analysis. Accordingly, the research carried out expert consultation, carefully chosen following Krott's [12] actor categories among the government bureaucracies (e.g., MoEF, BFD, DoE, and PC), foreign donor organizations (e.g., UNDP, German Federal Enterprise for International Co-operation (GIZ), and US Forest Service), multilateral

NGOs (e.g., International Union for Conservation of Nature—Bangladesh and Arannayk Foundation), and academics and researchers (University of Dhaka and Khulna University, Bangladesh)—considering their connection in planning, policy making and policy implementation on SFM issues in Bangladesh. Expert interviews were conducted in order to identify (i) the issue for case selection; (ii) the bureaucracy associated with the selected policy, in case of difficulty in finding related actors in a policy document; and (iii) the relevance and possible source of policy documents. Experts were chosen from the following organizations: Bangladesh Forest Department, 3; Department of Environment, 2; Ministry of Environment and Forests, 1; Planning Commission, 1; IUCN Bangladesh, 1; International Institute for Environment and Development, 1; Arannayk Foundation Bangladesh, 1; Bangladesh Center for Advanced Studies, 1; Khulna University, Bangladesh, 1; University of Dhaka, Bangladesh, 1; UNDP, 1; GIZ, 1; US Forest Service, 1; and FAO, 1. Further details of the experts are not exposed since we are committed not to disclosing their identity. The interviews were conducted in Dhaka, Bangladesh during March–April 2013 and February–April 2014 through telephone, email, and physical visit to the expert.)

Table 2. Categorization of Strategic Tasks and Related Power Features Typically Assigned to Bureaucracies.

Policy Cycle	Categories of Strategic Tasks Typically Found in Selected Policies	Examples of Power Features
Formulation	Preparation and further revision of a policy	The BFD prepared "National Forest Policy" in 1994 (NFP (National Forest Policy) 1994 [82])
	Initiation, guidance and/or coordination to policy preparation or revision	The MoEF initiated and provided guidance for preparation of the "Forestry Master Plan" in 1993 (Forestry Master Plan (FMP) 1993 [83])
	Approval of funding, manpower	The Planning Commission, MoEF and Finance Division approved project document and fund for implementing the "Sundarbans Protected Area Management Assistance" project in 2005 (MoEF (Ministry of Environment and Forests) 2014 [84])
	Approval of the policy	The MoEF and ADB approved the "Social Forestry Rules 2004" (Social Forestry Rules 2004 [85])
Implementation	Financial and technical assistance to implement a policy	GIZ provided financial and technical assistance to implement "Resource Conservation through Community Reforestation and Forest Management in Chunati Wildlife Sanctuary" project in 2011 (MoEF 2014 [86])
	Establishment of a REDD cell to deal with the REDD activities	The BFD established a REDD cell to perform all REDD relevant activities according to the "Bangladesh REDD+ Readiness Roadmap 2012" (Bangladesh REDD+ Readiness Roadmap 2012 [87])

Table 2. *Cont*.

Policy Cycle	Categories of Strategic Tasks Typically Found in Selected Policies	Examples of Power Features
Implementation	Declaration and management of protected areas, ecological critical areas, eco-park, botanical garden, *etc.*	The MoEF and BFD is responsible for increasing the protected areas as stated in the National Forest Policy-1994 (NFP 1994 [82])
	Coordination and collaboration at national, regional and international level	The National Sixth Five Year Plan-2011, stated the collaboration and coordination with global and regional partners by the MoEF, Ministry of Foreign Affairs and Economic Relations Division (ERD) (GoB (Government of Bangladesh) 2011 [88])
	Create awareness among national stakeholders	The BFD organized the National Forestry Congress-2011 as a response to the UN Assembly declaration, "2011 for creating awareness among stakeholders" (UN Forum on Forests (UNFF) 2012 [43])
	Protect, recover and restore of forest biological resources through habitat management and afforestation	The BFD implemented "Establishment of Sheikh Mujib Safari Park, Gajipur project" for habitat conservation and development of forest and wildlife in 2010 (MoEF 2014 [89])
	Carry out inventories, prepare and update management plan, and develop database for sustainable management of forest biodiversity	The BFD carried out inventories and prepared management plan of forest resources through "Forest Resources Management Project" in 1992 (World Bank 1992 [90])
	Establish multipurpose plantation on roadside, beside railway lines and embankment plantation, homestead and institution plantation and trial foreshore plantation	The BFD implemented the planation activities through the ADB funded "Coastal Green Belt Project in 1995 (Asian Development Bank (ADB) 2005 [91])
	Extraction of the infected Sundri (*Heritiera Fomes*) trees	The BFD extracted top dying infected Sundri trees from the infected areas and carried out enrichment plantation in the gaps created in the Sundarban Forests, 1995 (MoEF 2014 [92])

Table 2. *Cont.*

Policy Cycle	Categories of Strategic Tasks Typically Found in Selected Policies	Examples of Power Features
Monitoring and evaluation	Monitoring and Evaluation of project activities	The Implementation Monitoring and Evaluation Division (IMED), MoEF, BFD, World Bank, Planning Commission were responsible for monitoring and evaluating project activities of "Strengthening Regional Cooperation for Wildlife Protection Project" 2011 (DPP (Development Project Proposal) 2011 [93])
	Evaluation of policy tasks	The IMED ensures evaluation of policy tasks for "National Bio-safety Plan of Action " project in 2013 (PC (Planning Commission) 2014 [94])
	Audit of financial activities	The office of the Comptroller and Auditor General (C & AG) conduct audit of financial activities, for example, "Sundarbans Biodiversity Conservation Project" in 1999 (ADB 2008 [95])

5. Results

5.1. SFM Policies and Their Strategic Tasks, 1992–2013

A total of 121 policies (73 Government of Bangladesh-funded and 48 foreign donor-funded), and 1012 strategic tasks were identified in SFM issues in Bangladesh from 1992–2013 (a detailed list of all policies is attached in Supplementary Material, Table S1). A yearly breakdown of SFM policies and strategic tasks with the funding positions of Bangladeshi government and foreign donors is attached in Appendix B. For this research, these policies and respected strategic tasks were used as the main unit of analysis to understand the distribution of power elements among various state bureaucracies in the field of SFM policy.

5.2. Distribution of Power Elements among Domestic Bureaucracies and Foreign Donors

However, the table states that the MoEF (Ministry of Environment and Forests (one of the sectoral ministries responsible for policy decisions, coordination, and negotiation as well as overseeing the implementation of policy tasks related to forests and environment)) holds the top position, and delivers more tasks among domestic agencies, which is apparently equal to the BFD (Bangladesh Forest Department (attached department working under the MoEF responsible for implementing policy tasks related to forestry at the field level)), and far greater than the PC (Planning Commission (state central body working under the Ministry of Planning responsible for approving development projects and formulating national plans))—followed by the DoE (Department of Environment (attached department working under the MoEF responsible for implementing policy tasks related to the environment at the field level)), FD (Finance Division (key state agency working under the Ministry of Finance responsible for the formulation of the national budget and approving the allocation of the sectoral budget)), IMED (Implementation Monitoring and Evaluation Division (state central organization working under the Ministry of Planning responsible for monitoring and evaluation of state development projects)), C & AG (Office of the Comptroller and Auditor General (supreme national audit institution responsible for auditing government receipts and public spending)), ERD (Economic Relations Division (key state agency working under the Ministry of Finance responsible for mobilizing external resources as well

as negotiation and coordination among domestic state and foreign donor bureaucracies)) and BFRI (Bangladesh Forest Research Institute (the only state forest research institute in Bangladesh)). On the other hand, the UNDP enjoys the highest level of tasks among the foreign donors, followed by the international banks (the ADB and World Bank) and other bilateral (the United States Agency for International Development (USAID), and GIZ) and multilateral donor organizations (FAO, GEF, and IUCN) (see Table 3).

Table 3. Comparison of power elements among domestic bureaucracies and foreign donors.

| Identified Competent Bureaucracies	Total Tasks	Dominant Information		Incentives		Coercion	
		No's	Percentage (%)	No's	Percentage (%)	No's	Percentage (%)
Domestic Bureaucracies							
Ministry of Environment & Forests (MoEF)	396	160	23.49	60	18.24	176	35.27
Bangladesh Forest Department (BFD)	391	184	27.02	183	55.62	24	4.81
Planning Commission (PC)	240	83	12.19	7	2.13	150	30.06
Department of Environment (DoE)	126	58	8.52	50	15.20	18	3.61
Finance Division (FD)	109	3	0.44	8	2.43	98	19.64
Implementation, Monitoring and Evaluation Division (IMED)	74	74	10.87	0	0.00	0	0.00
Office of the Comptroller and Auditor General (C & AG)	74	74	10.87	0	0.00	0	0.00
Economic Relations Division (ERD)	72	35	5.14	4	1.22	33	6.61
Bangladesh Forest Research Institute (BFRI)	27	10	1.47	17	5.17	0	0.00
Sub-total	1509	681	100	329	100	499	100
Foreign Donor Bureaucracies							
United Nations Development Program (UNDP)	36	13	23.64	22	25.58	1	25.00
Asian Development Bank (ADB)	25	9	16.36	15	17.44	1	25.00
World Bank (WB)	22	10	18.18	10	11.63	2	50.00
United States Agency for International Development (USAID)	20	11	20.00	9	10.47	0	0.00
International Union for Conservation of Nature (IUCN)	13	5	9.09	8	9.30	0	0.00
Global Environmental Facility (GEF)	12	0	0.00	12	13.95	0	0.00
Food and Agriculture Organization of the United Nations (FAO)	10	5	9.09	5	5.81	0	0.00
German Federal Enterprise for International Cooperation (GIZ)	7	2	3.64	5	5.81	0	0.00
Sub-total	145	55	100	86	100	4	100
Total	1654	736	44.50	415	25.09	503	30.41

Note: Table 3 compares in detail the tasks and resulting power elements among participating domestic and foreign donor bureaucracies. Here, tasks are identified as 1012 but the number deviates to 1654 tasks, which include simultaneous responsibilities of specific bureaucracies for some tasks.

With respect to power elements, the MoEF enjoys the highest amount of coercion power, holding more than the Planning Commission and the Finance Division, and followed by the ERD, BFD, and DoE. Subsequently, the BFD possesses almost the same amount of dominant information and incentives power, and is far greater than the Planning Commission, the IMED, and the C & AG's power in this regard. Additionally, the IMED and C & AG hold only dominant information power. Furthermore, the donor organizations largely possess the incentives and dominant information power. The UNDP and the two international banks, however, are powerful in that they held all power elements. The multilateral donors, including the UN bodies, and the banks are more powerful in terms of involving incentives elements, compared to bilateral donors. The UNDP, followed by USAID held more dominant

information power than the banks. In addition, the GEF holds only incentives power. Consequently, only the World Bank, ADB, and UNDP rarely enjoy coercion power. Moreover, among the UN bodies, the UNDP is far more influential in exercising all power elements than the FAO. On the other hand, the two banks held similar positions in attaining information and coercion power. However, the ADB is more powerful than the World Bank in applying incentives power.

5.3. Sum of Power Elements by Domestic Bureaucracies and Foreign Donors in Charge of Tasks, 1992–2013

Figure 3 indicates that there is a fluctuant distribution of power elements observed among the state bureaucracies who shared their power elements over the period. However, the MoEF holds the utmost level of coercion power. Dominant information and incentives power follow, respectively. This coercion power is being used with the approval of policy documents and fund allocation; information power is being utilized for the guidance and monitoring of policy tasks as well. The BFD seemingly utilizes the same quantity of information and incentives power, and a small amount of coercion power.
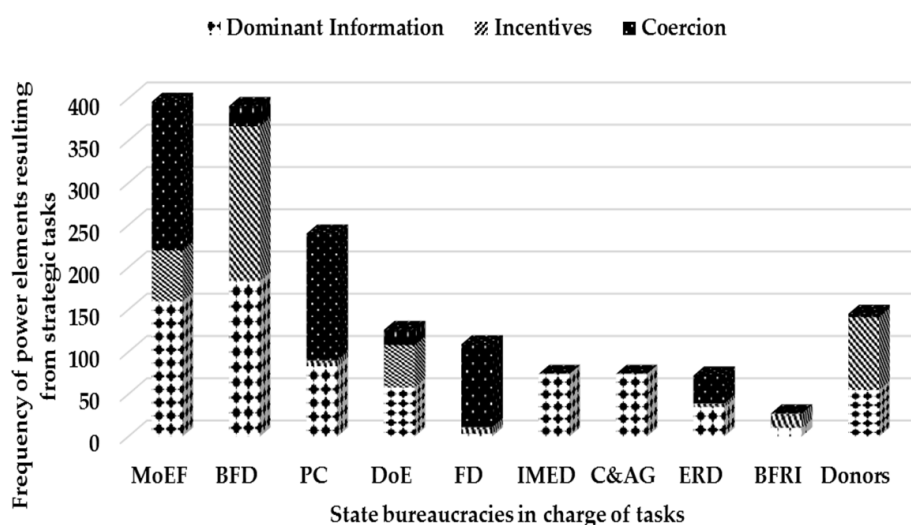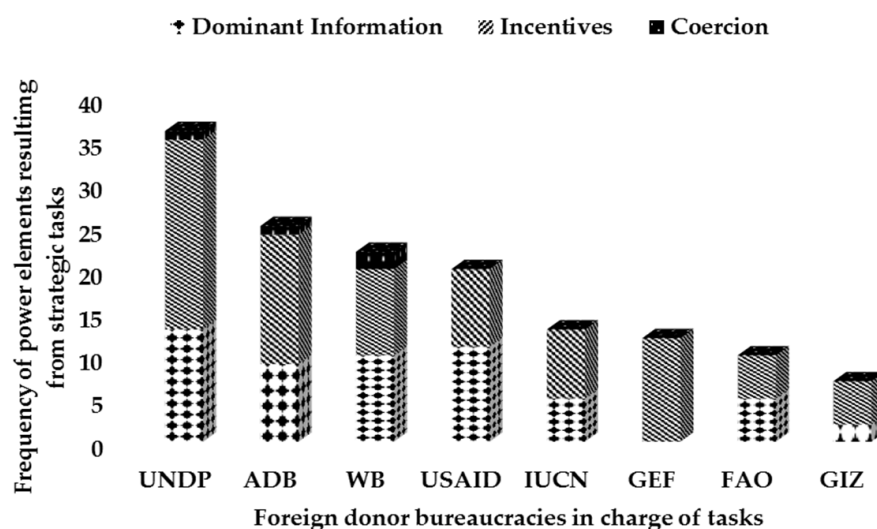

Figure 3. Cumulative power elements of state bureaucracies in charge of tasks. Here, MoEF = Ministry of Environment and Forests; BFD = Bangladesh Forest Department; PC = Planning Commission; DoE = Department of Environment; IMED = Implementation, Monitoring and Evaluation Division; C&AG = Office of the Comptroller and Auditor General of Bangladesh; FD = Finance Division; ERD = Economic Relations Division; BFRI = Bangladesh Forest Research Institute.

It is notable that the BFD is the only administrator to develop the country's forest resources sustainably through the preparation of draft policy, overall execution, and implementation of policy tasks, through the utilization of dominant information and incentives power. However, the Planning Commission and the Finance Division uses chiefly coercion power, accompanying the essential tasks of approval of project documents and approval of fund allocation. Moreover, the IMED and C & AG exercise only information power because of the IMED's involvement in the monitoring and evaluation of policy tasks, and because the C & AG's work entails mainly auditing of financial activities. On the other hand, the donors apply largely incentives power, followed by information. Remarkably, they enjoy coercion power with domestic bureaucracies, but only to a very small extent.

On the other hand, the foreign donor community, including two UN bodies and two influential banks, show their shared power elements scenario in the Figure 4. However, the UNDP possesses mainly incentives power over dominant information, and it enjoys a small extent of coercion power. Another UN body, the FAO, enjoys the same amount of information and incentives power. Accordingly, the representation of development banks, the ADB, exercises chiefly incentives power over information power, with a small amount of coercion power. The other bank group, the World Bank, utilizes the

same amount of information and incentives power with a small amount of coercion power. The share of information power is higher than incentives power for the USAID, and the reverse is true for the IUCN and GIZ. It is pointed out that the GEF applies only incentives power elements. The dominant information and incentives power of donors deals with the technical assistance (e.g., expertise) and financial incentives (e.g., direct funding) for policy preparation, and the holding of coercion power relates to the approval of policies, funds, and sanctions.

Figure 4. Cumulative power elements of foreign donor bureaucracies in charge of tasks. In the figure, UNDP = United Nations Development Programme; ADB = Asian Development Bank; WB = World Bank; USAID = United Stated Agency for International Development; IUCN = International Union for Conservation of Nature; GEF = Global Environmental Facility; FAO = Food and Agriculture Organization of the United Nations; GIZ = German Federal Enterprise for International Cooperation

5.4. New Tasks Sorted by Power Elements over Time (1992–2013)

Figure 5 shows the policy styles on SFM issues in Bangladesh based on power elements resulting from new tasks in domestic bureaucracies and foreign donor bureaucracies throughout the whole period. The policy styles (see details in Section 6.4) denote the use of the dominant information power element as an information policy instrument, incentives power as financial instruments, and coercion power as regulatory instruments.

However, among domestic agencies, the information policy instrument was dominant throughout the whole period with little fluctuation, except in 1996. A high percentage of financial instruments were prominent in 1992, 1993, 2003, and 2011–2012. The regulatory policy instruments were detected with slight variation in the period from 1992–2013, except in 1996 and 2003. On the other hand, among foreign donor agencies, the information policy instrument was prominent in 1992, 1995, 1997, 2002–2004, 2006, and 2012. The financial instrument was observed in 1992–1995, 1998–2000, 2005, 2007, 2009–2011 and 2013. The regulatory policy instruments were detected to a limited extent in 2004, 2009, and 2012. There were no policy instruments added in 1996, 2001, and 2008.
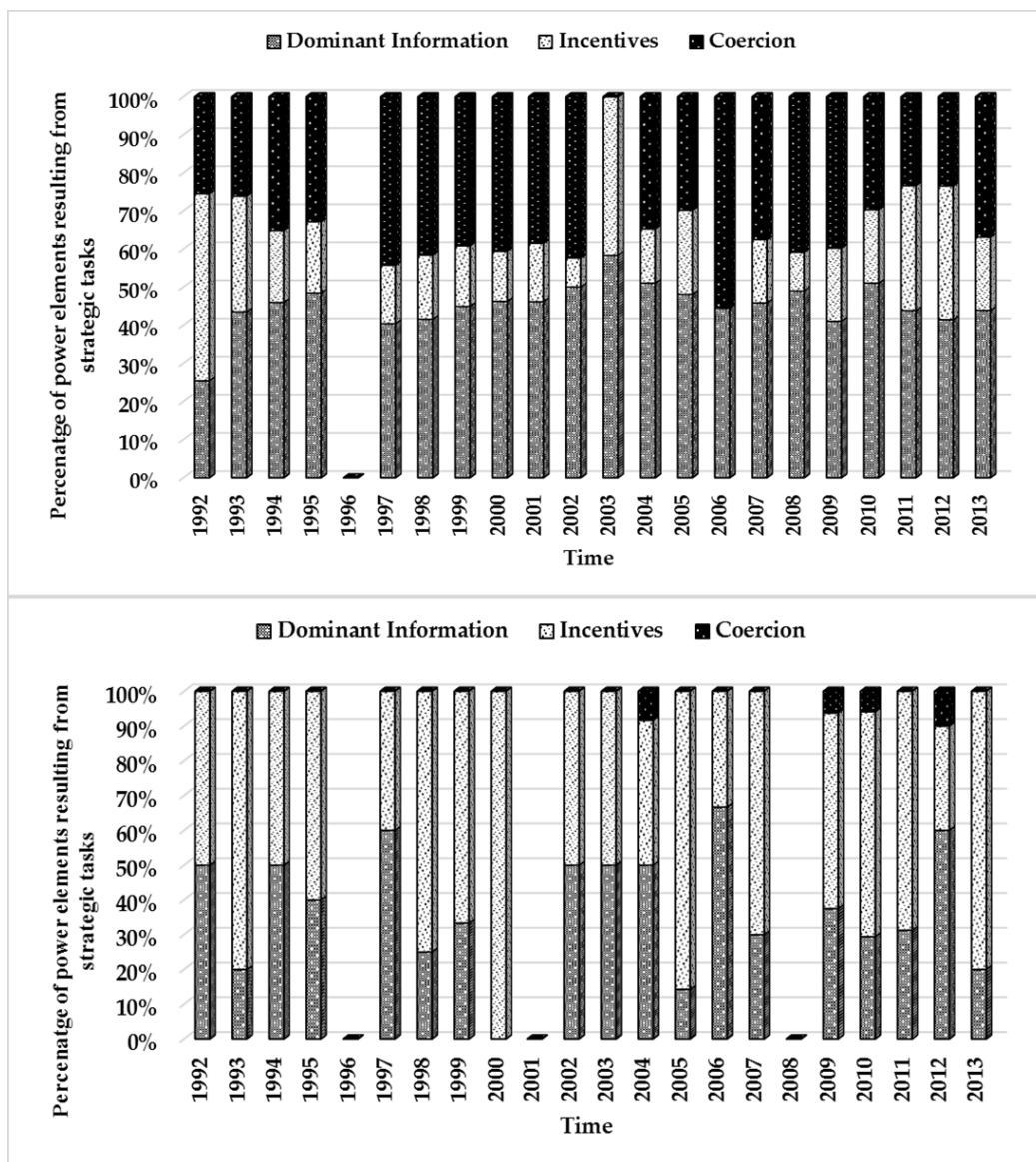
Figure 5. Policy styles based on new tasks sorted by share of power elements of domestic bureaucracies (**Top**) and foreign donors (**Bottom**) over time: 1992–2013.

5.5. New Tasks Sorted by Power Elements and Distinguished into Competing Domestic and Foreign Donor Bureaucracies over Time: 1992–2013

Figure 6 depicts the representation of the power elements in multiple competing domestic agencies, resulting from the new strategic tasks over a period of 22 years. However, the MoEF shares the largest number of coercion power, followed by dominant information and incentives power, respectively. It was largely from 2009–2013, due to the main focus on three thematic areas of SFM, forest biodiversity, extent of forest resources (e.g., number of protected areas), and protective and productive functions of forests (climate change and afforestation), whereas the BFD contributes the highest amount of information and incentives power, and was more prominent in 2010–2012; the coercion power is the lowest among the power elements. Subsequently, the Planning Commission and Finance Division possess the second and third positions for the application of coercion power, followed by the ERD. By contrast, IMED and C & AG have equal information power. Interestingly, the contributions of BFRI are very small in all power elements among the state agencies.
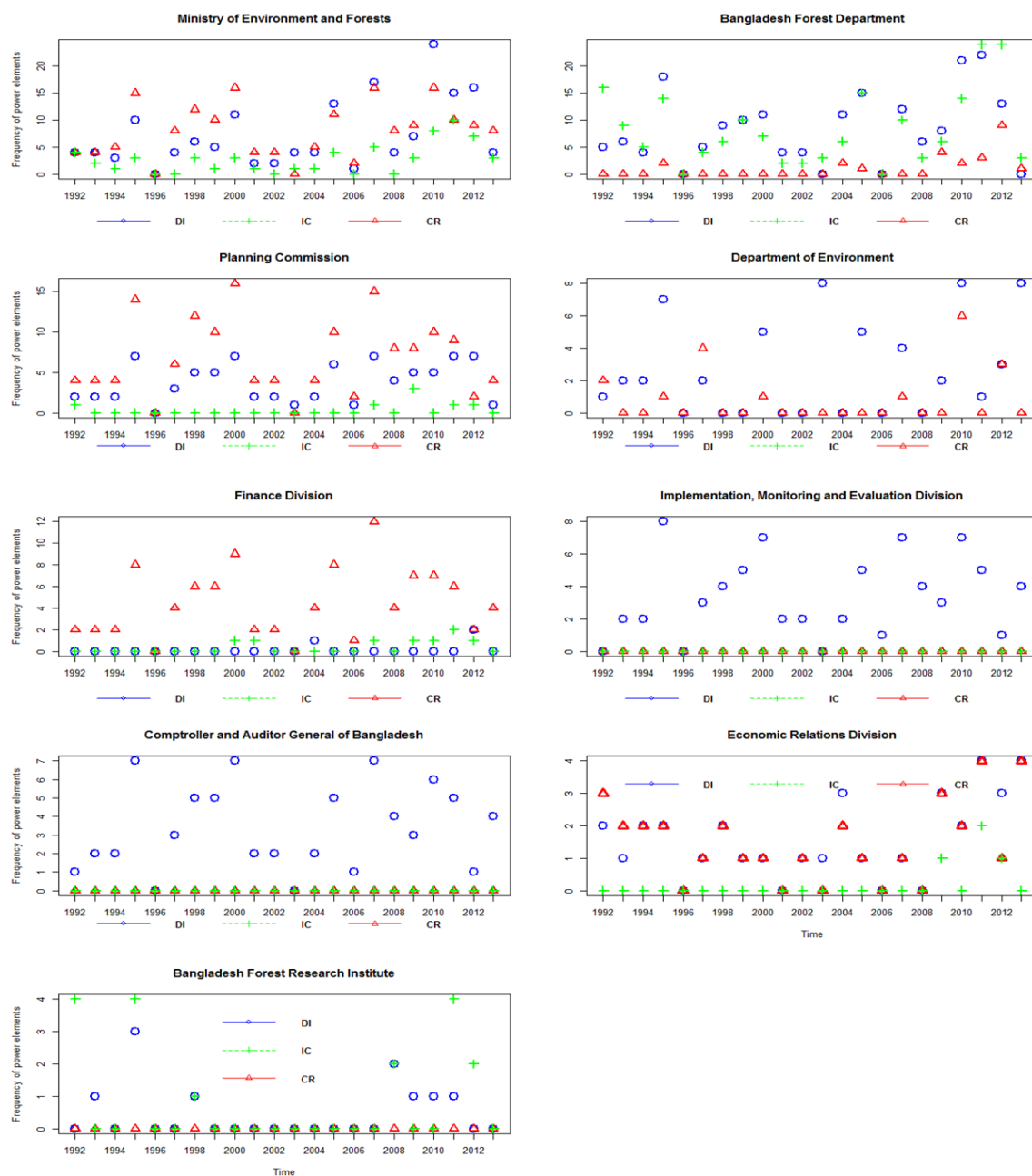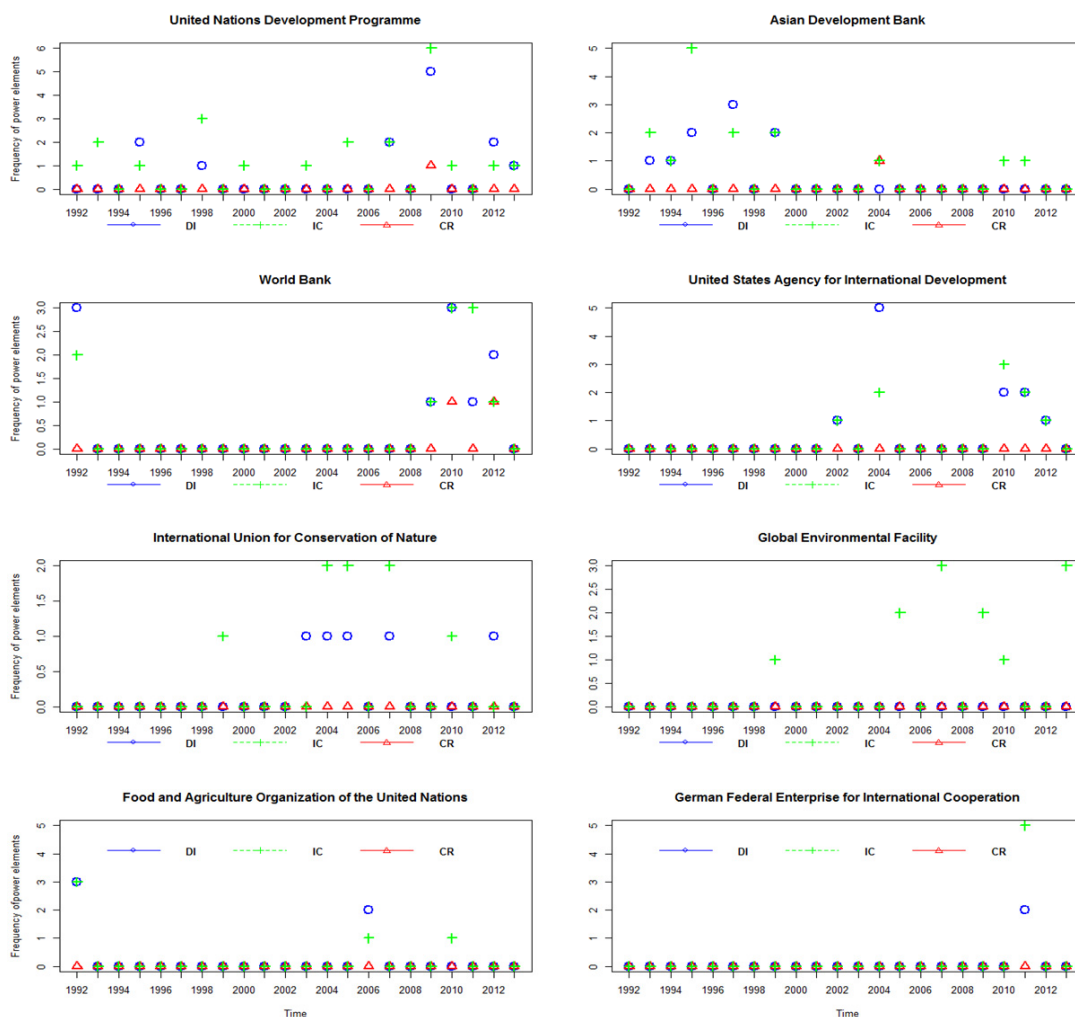
Figure 6. New tasks sorted by power elements and distinguished into competing domestic bureaucracies over time: 1992–2013. In the figure, DI = Dominant Information; IC = Incentives; CR= Coercion.

As can be seen again from Figure 6, the power elements of multiple competing bureaucracies were increased or decreased over the years, which explains the power gain/loss on them. The period between 2010 and 2012 saw a sharp growth of dominant information power, and the MoEF gained six times as much as it lost in the period between 2001 and 2004. Similarly, the MoEF lost coercion power between 2001 and 2003, but gained four times that in the periods between 1998 and 2000. Correspondingly, between 2010 and 2012, the BFD recovered six times as much information power and ten times as much incentives power from 2001 to 2003, although, coercion power was exercised noticeably in the period between 2009 and 2013. Therefore, a gain/loss of power occurred among the rest of the competing bureaucracies, such as Planning, Finance, and Monitoring and Evaluation

bureaucracies, in the same way. The power position of the BFRI is symbolic and could be ineffective in this regard.

Figure 7 depicts the representation of the power elements in multiple competing foreign donor agencies, resulting from the new strategic tasks over a period of 22 years. Here, the UNDP utilizes the highest level of incentives and dominant information power among foreign donor agencies, and especially the year 2009 (its peak time), when it was also engaged in coercion power. The information and incentives power were shared equally by the World Bank and USAID, followed by IUCN. The World Bank holds the top position including its coercion power in 2010, whereas the GEF shares only the incentives power. Conversely, the FAO and GIZ employed both information and incentives power. It is pointed out that the ADB applied coercion power first in 2004 through approving the "Social Forestry Rules 2004".

Figure 7. New tasks sorted by power elements and distinguished into competing foreign donor bureaucracies over time: 1992–2013. In the figure, DI = Dominant Information; IC = Incentives; CR= Coercion.

However, there were different turns of power elements among the international donor agencies throughout the period. The UNDP gained dominant information power mostly in the years of 1995, 2007, 2009, and 2012 and lost it in other years. It also gained incentives power mainly in the years of 1993, 1998, 2005, 2007, and 2009. Between 1993 and 1995, the ADB gained information and after this incentives power was chiefly gained in 1997 and 1999. The World Bank gained both information and incentives power in 1992, then it discontinued gains over a long period of time (*i.e.*, loss of power), and

again resumed power in the period between 2009 and 2012. It should be noted that the UNDP, ADB, and World Bank applied coercion power gained in the years of 2004, 2009, 2010, and 2012, respectively. Similarly, a gain/loss of power occurred among the rest of the competing donor bureaucracies, such as USAID, IUCN, FAO, and GIZ. .

6. Discussion and Conclusion

6.1. Significance of Power Elements in the Leading Bureaucracies

The power elements were disparately distributed among the domestic bureaucracies. The Ministry of Environment and Forests and Bangladesh Forest Department, for example, utilize the highest levels of power elements, followed by the Planning Commission, Department of Environment, and Finance Division. However, the forest ministry unevenly exercises all power elements, and utilizes the uppermost level of coercion power. This indicates that this organization has the mandate to make decisions regarding policy formulation, and resources distribution to its subordinate departments (*i.e.*, forest department) to implement SFM policies. A contrasting result was found for a community forestry study in Nepal [72], where the Forest Department enjoyed the highest level of coercion power. However, three power elements were used by the Ministry of Forestry in Cameroon [76], Namibia [74] and Forest Department in Indonesia [73]. Meanwhile, this research found that the Forest Department utilizes the highest level of dominant information and incentives power. This means that this bureaucracy owns professional manpower and the technical knowledge to implement various elements of SFM policy at field level. The implementation instruments and resources are allocated towards them to execute the policy. For example, the organization utilizing their information and incentives power carries out the afforestation program involving the local community to maintain the productive and protective function of forests in the country. Accordingly, Salam and Noguchi [96] presented that the Forest Department has the right to access all resources for smooth implementation (*i.e.*, dominant information and incentives power) of SFM policies, except in policy formulation *i.e.*, coercion power. In addition, the environment bureaucracy with the most dominant information and incentives power plays a moderate role, largely related to implementing activities on biodiversity conservation, and protection of forest-based ecosystems. On the other hand, the planning and finance bureaucracies based on their coercion and information power affect the SFM policy. These bureaucracies direct the policy implementation process from the center by allocating overall resources (e.g., fund and project staff), and approving project concepts and plans related to SFM in Bangladesh. Aurenhammer [54] emphasized the importance of maintaining freedom of research and the incorporation of research results into project formulation and implementation (p. 281). However, the Bangladesh Forest Research Institute, the only governmental forest research institute in Bangladesh, shared very limited power and could be treated as a frail organization.

Then again, it is observed that among foreign donors, the UNDP, World Bank, and ADB are powerful actors in all three power elements. Previous studies show similar results, where the UNDP, World Bank, ADB, USAID, GIZ are all active in funding conservation activities linked with local, social and economic development [96–98]. Comparable results were found for forest biodiversity in Bangladesh [99], but in most cases, those in power through the use of coercion tactics are not powerful due to dominant information and incentives power, or *vice versa*. The present study shows that the foreign donor bureaucracies based mostly on incentives and dominant information power influence the SFM policy. This is because they provide funds to execute development activities, and extend technical assistance to design any guideline or action plan to support implementation of activities. For example, the UNDP and ADB provided funds and technical assistance to formulate "Forestry Master Plan" in 1993. Another study on community forestry indicated that the ADB, as an influential donor bureaucracy, exercises incentives power through funding in Bangladesh [96]. Successively, in the community forestry study, the GIZ utilized dominant information and incentives power in Namibia [74], and the World Bank and GIZ were influential actors who utilized all of these power

elements in Cameroon [76]. Therefore, with these three power elements, the domestic and international donor bureaucracies influence SFM as an international issue by participating in the national policy process. Hence, each power element could be analyzed separately in future research.

6.2. Power Dynamics among Domestic and Foreign Donor Bureaucracies

The power elements were distributed mainly among the forest ministry and department, Planning Commission, environment department, and Finance Division, respectively, based on the tasks of SFM-related policies. Accordingly, the state agencies experienced a loss and/or gain in their power simultaneously, based on the sharing of their related tasks. It is assumed that the loss/gain of power in individual bureaucracies occurred through the carrying out of their related tasks over time. For example, between 2010 and 2012, the forest ministry gained the highest level of the three powers, and the forest department gained the same, except for coercion power, as was comparatively seen in other periods. Comparable results were found for Indonesia, where the Ministry of Forestry lost its power for a time, by sharing tasks with other domestic bureaucracies for the development of a map policy and REDD+ issue [26]. Understandably, state bureaucracies may not implement coercive power, due to its tendency to garner negative responses and therefore a bad state reputation, which would be considered a loss of power, since power is also determined by a reputational power in a policy domain [100–102]. For example, the Bangladesh Forest Department's reputation was tarnished by the allegation of forest resource exploitation in Bangladesh [19,103]. The analysis shows that central planning, monitoring and financial bureaucracies (e.g., Ministry of Planning and Ministry of Finance), as well as the line ministries (e.g., forest ministry), present themselves as powerful actors, but local-level institutions often hold limited power over the issues of SFM. Therefore, the gain and/or loss of power is influenced by the sharing of tasks based on the specific international issue over time, but it is noteworthy that the depth of research on power dynamics based on strategic tasks and time could be scrutinized in future.

On the other hand, the UNDP, ADB, and World Bank exercised the highest amount of assigned tasks among the donor agencies throughout the period. For example, the UNDP gained all three power elements in 2009, but power elements did not rise over 1996–1997, and 2001–2002. Similarly, the ADB and the World Bank gained power at the beginning stages of this time period (1992–1997), and had observable discontinuation (loss) for a long period, lasting until 2009. They then resumed their gaining of power elements, especially in 2010 and 2012. In this way, donor agencies may gain or lose powers simultaneously with other actors. This indicates that donor agencies exercise power elements in coalition with state agencies for the promotion of SFM issues in international forest regime, whereas, the importance of regime is often viewed as involving a change of national forest related policies [46]. These domestic politics are shaped or reshaped by the donor's policy instruments, resulting in effective and enduring impacts on domestic governance and policy networks through a coalition or partnership among them [33]. On the other hand, Bernstein and Cashore [104] mentioned that the success of transnational actors over charges of violating sovereignty depends largely on coalition building strategies with potential domestic allies. Hence, the exercise of power by donor bureaucracies is a dynamic one, which is influential over domestic actor coalitions in international forest issues. A future research window regarding long-time funding gaps by donors in forestry sector certainly exists.

6.3. Power and Conflict of Interest among State Bureaucracies

The forest ministry and department are the main actors identified, but the ministry and Planning Commission must be identified, too, as more influential actors than the department among state bureaucracies. This is due to their coercive power. Similarly, Rahman and Giessen [44] argue that "the forest ministry and department are the main actors for SFM, but the department is treated as a passive actor in regard to power and the central decision making process that the department oblige to maintain the decision taken by the ministry" [103]. The department is the sole state bureaucracy, executing all forest-related and legally binding guidelines (policies) in the field through

a decentralized administrative setup. For example, the department has to depend on the decisions of the ministry, Planning Commission, and Finance Division for funding to do with afforestation, and other productive and protective function of forests. These multiple mandates from multiple powerful bureaucracies may result in delay, underestimation, and contestation towards fulfilling goals of SFM policies. This is evident, since there is no criteria, indicators, or uniform management plan developed thus far, with the few exceptions of donor-funded plans for a particular forest area, to implement particular development activities. Krott *et al.* [62] stated that the stronger power is exercised through day-to-day implementations at the local level in the forest. According to Peters (2010) as cited by Wibowo and Giessen [16], only a single actor has a dominant role in a particular sector, and intersection of responsibilities among state bureaucracies will create conflict of interests and unproductive contestation [105–107]. For example, the ADB [95] reported that the conflict between the forest ministry and department created over the dissatisfaction with the department during the final project design for the "Sundarbans Biodiversity Conservation Project—1999." The project design was overruled by the ministry. Thus, this may create a scope of further in-depth research on how the implementation of policies and projects could produce a conflict of interest among powerful bureaucracies in the forestry sector.

6.4. Variation of Power Elements over Time, and Policy Mixes

This study found that power elements are reflected by the share of tasks between state and non-state bureaucracies throughout a period. The policy mixes or policy instruments could be incurred by these distinctions of task, based on the duration of effecting power elements. Policy mixes—a bundle of techniques—are applied to attempt to change society's behavior through attaining policy outcome [12,18,108]. Furthermore, Etzioni [69] classifies policy mixes as regulation, financial means, and information [12,18,62,108]. This research recognizes these policy mixes, which is an important instrument through which we may identify policy gaps, and may recommend plans of action in order to formulate effective policies in a country in future. Policy instruments may vary, depending on the policy issue. Here, the SFM policy issue is studied, but for climate change or community-based forestry policy issues, the resulting policy mixes may differ, and ought to be studied in future.

6.5. Limits and Directions of SFM Policy by Power Distribution

The powerful actors identified set the limits and directions of domestic SFM policies in a country. Since the interests, power, and frame are set by these powerful actors, they determine the outcome of forest-related challenges (similar, [54,70,74,109–113]). The actors who have more powers are more active, but have much opportunity to associate keenly in the process of SFM policy implementation, by utilizing the power elements. These elements of power used by any agency can set the limits of a policy issue towards its implementation. The study, for instance, indicates that: (1) the environmental issues could change little due to less power of Department of Environment; (2) strong approval power of line ministries (e.g., forest, planning and finance ministry) limits autonomy of forest policy as a policy sector; and (3) a considerable information power (funding negotiation, management and coordination) used by the line ministries, outside of the forest professionals, limit the policy decisions towards effective implementation of SFM issues. For example, since the planning and finance bureaucracies have much coercive power in allocating resources and approving development projects, they may impose any legal and institutional obligation in designing and implementing SFM policies. Furthermore, the elements of power held by an actor can direct the development of SFM in a country. The study, in this instance, finds that: (1) There is potential for strong and active forest management due to high incentives and information, held by the Forest Department. However, this opportunity is blocked by a logging ban, hence untapped administrative potential. (2) The Forest Department's very low coercive power indicates poor control of policy decisions over manpower and resources, and field-level law enforcement towards effective implementation of SFM issue elements. This individual or a coalition of powerful bureaucracies set the boundaries and direction of SFM policies, by extending their influences

in designing, formulating, implementing and monitoring the policy instruments of SFM at different phases of the policy cycle. As Krott *et al.* [62] pointed out, "this actor-centered power approach is basically a tool for quick assessment of power networks, delivering valuable preliminary information for designing forest policy in practice" (p. 34). These power networks create a widespread opportunity for policy makers to find the gaps and challenges, and to further refine the policies recommending distribution/redistribution of tasks among bureaucracies in order to execute a response to the issue faultlessly. The interested national and international actors may make coalitions based on these power features, and may maintain or even increase formal organizational interests and informal preferences on SFM policies. This research, for the first time, has developed a SFM policy database covering the period of 1992–2013, which will guide policy makers and researchers in identifying currently powerful actors, designing policies with them based on the present and past alignment of powers, and directing advanced studies with individual powerful bureaucracies in Bangladesh. The details of policies over the period may aid in identifying the important issues related to international SFM policies, and may further compare the implementation status of core elements in SFM over a period in a country like Bangladesh.

6.6. Methodological Challenges and Applicability

The empirical analysis is based on data from formal policy and project documentation that does not cover policy implementation data at field-level, since informal reality may deviate from the formal. Furthermore, this study does not analyze the full power of an actor, but rather focuses on the power accorded to bureaucracies by specific (SFM) policies. As this approach of power analysis is a new arena for Bangladeshi conservation and management policy research, further study on power analysis of actors associated with informal reality at field-level is recommended. In addition, the study focuses contemporary pictures of power, and in order to manage a quantitative analysis within the scope of the study, this methodological choice at the cost of historical detail is justified here. Moreover, any qualitative study on any of the 121 policy demands to include the evolution and historical details of that policy, whereas it is key to analyze the power of national and donor bureaucracies in SFM policy. However, how they negotiate and struggle with political players (e.g., political parties, leaders) has largely been overlooked in this analysis. Since, Blaikie and Springate-Baginski [114] argue that inquiry into forest policy should not confine itself to the central ministry/department only. Rather at all stages of the policy process, the politics of knowledge production is an important element. Therefore, it would be worthwhile to look into this aspect in future.

There is a limited causal link between international forest regime and SFM, and its effects in terms of existing policies and projects in Bangladesh. However, according to the "direct access to domestic policy making" theorem of Bernstein and Cashore [32,33], a causal link on selected policies has already been established elsewhere [17]. The power approach could be applied in qualitative and quantitative research, due to the straightforward definition and observable facts available [71–73,115]. The methodology developed based on this power theory would be useful for translation of other international issues (e.g., climate change, community-based forestry, *etc.*), and comparative studies with other countries on various land-use issues. Here, it can be mentioned that in addition to finding a domestic coalition partner, international donors need to consider the power issue relating to said domestic partner.

Appendix A

Table A1. Interpretation of policy data based on policy cycle and power theory—An example.

Policy	Start Year	Policy Cycle	Strategic Tasks	Power Elements	Bureaucracy
Resource Conservation through Community Reforestation and Forest Management in Chunati Wildlife Sanctuary, Chittagong	2011	Formulation	1. Preparation of the project document	Dominant Information	BFD
			2. Approval of the project document	Coercion	MoEF, PC
			3. Approval of fund allocation	Coercion	FD, PC, MoEF, ERD
		Implementation	4. Financial and technical support for implementing this project	Incentives	GIZ
			5. Improve biodiversity conservation and management through people's participation	Dominant Information	BFD
			6. Habitat restoration of Asian Elephant	Incentives	BFD
			7. Provide advisory services and training for capacity building of key stakeholders	Incentives	MoEF, GIZ
		Monitoring	8. Monitoring and evaluation of project activities	Dominant Information	IMED, MoEF, BFD, GIZ, PC
			9. Audit of financial activities	Dominant Information	C & AG

BFD = Bangladesh Forest Department; MoEF = Ministry of Environment and Forests; PC = Planning Commission; GIZ = German Agency for International Cooperation; IMED = Implementation, Monitoring and Evaluation Division; C & AG = Office of the Comptroller and Auditor General of Bangladesh; ERD = Economic Relations Division.

Appendix B

Table B1. Overview of Sustainable Forest Management policies and strategic tasks from 1992 to 2013.

Year	No. of Policies and Projects	No. of Strategic Tasks	Government Funded	Donor Funded
1992	3	43	1	2
1993	3	30	1	2
1994	3	24	1	2
1995	8	69	5	3
1996	0	0	0	0
1997	4	37	3	1
1998	6	44	4	2
1999	5	39	4	1
2000	9	67	8	1
2001	2	12	2	0
2002	2	14	1	1
2003	2	17	0	2
2004	3	41	0	3
2005	10	69	6	4
2006	2	9	1	1
2007	11	79	8	3
2008	4	25	4	0
2009	7	60	3	4
2010	14	113	9	5
2011	9	89	5	4
2012	8	88	5	3
2013	6	43	2	4
Total	121	1012	73	48

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