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From Target to Implementation: Perspectives for the International Governance of Forest Landscape Restoration

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Abstract: Continuing depletion of forest resources, particularly in tropical developing countries, has turned vast areas of intact ecosystems into urbanized and agricultural lands. The degree of degradation varies, but in most cases, the ecosystem functions and the ability to provide a variety of ecosystem services are severely impaired. In addition to many other challenges, successful forest restoration of these lands requires considerable resources and funding, but the ecological, economic and social benefits have the potential to outweigh the investment. As a consequence, at the international policy level, restoration is seen as a field of land use activities that provides significant contributions to simultaneously achieving different environmental and social policy objectives. Accordingly, different policy processes at the international policy level have made ecological landscape restoration a global priority, in particular the Convention on Biological Diversity with the Aichi Target 15 agreed upon in 2010, which aims at restoring 15% of all degraded land areas by 2020. While such ambitious policy targets are important for recognizing and agreeing upon solutions for environmental problems, they are unlikely to be further substantiated or governed. The objective of this paper is thus to develop a complementary governance approach to the top-down implementation of the Aichi target. Drawing on collaborative and network governance theories, we discuss the potential of a collaborative networked governance approach and perspectives for overcoming the inherent challenges facing a rapid large-scale restoration of degraded lands.

Keywords: CBD Aichi Target 15; collaborative governance; private-public partnerships; network governance

1. Introduction

The depletion and conversion of forests and forested lands has turned vast areas of intact ecosystems into degraded landscapes: the Global Partnership on Forest Landscape Restoration (GPFLR) identified across all continents a total area of one to two billion hectares of converted and degraded forest lands [1]. Degradation is the result of land uses, such as unsustainable logging practices, encroachment and overexploitation, or direct and indirect land use changes, in particular for agro-industrial development and urbanization [2]. These human activities are the main causes of terrestrial biodiversity loss; they impair and disrupt the functionality of ecosystems, with mostly negative consequences for the provision of vital ecosystem services at global, regional and local levels [3,4]. Since it depends on the purpose and the perspective of those who assess the state of an ecosystem, there are more than 50 different definitions related to degradation [5]; however, despite significant differences, they all refer to a reduction of the capacity of a forest to provide ecosystem goods and services [6]. With this, degradation and its negative consequences affect present, as well as future generations across the globe, but most specifically, those who directly depend on the services provided by local ecosystems [7]. In this paper, we focus on one specific cross-cutting issue that aims at reversing these trends and their negative consequences: the restoration of degraded forest ecosystems [8].

In 2010, the Parties to the Convention on Biological Diversity (CBD) agreed in Nagoya on its strategic plan, the so-called Aichi targets. Here, ecosystem restoration is a crucial element of the goal “to enhance the benefits to all from biodiversity and ecosystem services”. In particular, Aichi Target 15 highlights the above-mentioned synergies between climate change, biodiversity and desertification, while it allows for its quantification): “by 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15% of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification [9]”. Although the target refers to all ecosystems, restoration of forests will be the main focus, given that a major proportion of the identified degraded areas are, or were, forested prior to their transformation. Restoration of degraded lands, especially those once covered by forests, is considered by scientists, non-governmental organizations (NGOs) and other actors as a field of activities that helps to maintain and provide a number of social and environmental services [10,11]. Due to its positive contributions to the sequestration of carbon dioxide and the so-called co-benefits, restoration also plays an increasing role in the negotiations under the United Nations Framework Convention On Climate Change (UNFCCC) on REDD+ [12], an international financing mechanism intended to compensate developing countries that succeed in mitigating land use and forest sector emissions [13].

At most international environmental conferences of the UNFCCC and the CBD, there is agreement that activities with apparent potentials to enhance synergies among the globally agreed upon

environmental and social objectives should be promoted. During the 1980s and 1990s, political theories on international relations assumed that implementation of policy targets at state-centered, international regimes, such as the Rio conventions, would occur automatically, trickling-down to local policy levels [14]. However, despite the expressed consensus on ambitious policy objectives and targets, the unabated trends of land use and conversion during the last two decades show that implementation and concrete actions on the ground lag behind, and the problems remain unsolved. Examples are the unabated increase of anthropogenic greenhouse gas emissions, the high rates of ecosystem degradation and conversion [15] and the continuing loss of biodiversity [16,17].

The failure to substantiate the agreed upon policy objectives brings the effectiveness and legitimacy of multilateral environmental agreements (MEAs) into question [18] and has prompted scholarly debates on more effective alternative modes of governance. In our reflections, we focus on the international policy level and the major challenge of resource mobilization, but we acknowledge that there are many other political and technical hurdles associated with the implementation of large-scale restoration at the national and at the local levels. Our main assumption is that without corresponding options for financing such activities, this target cannot be met and that the mobilization of new and additional funding to the levels outlined below requires a well-coordinated and institutional approach: globally and starting from 2013, Aichi Target 15 of the CBD strategic plan implies the necessity to restore annually an area equal to the size of the state of Nepal. A study estimating the costs of complying with Aichi Target 15 has analyzed very heterogeneous examples of restoration activities and estimates that the costs for restoration activities lie between US\$500 to 1500 per ha, which is equal to a financing need of US\$75 billion by 2020, or more than US\$10 billion per year [19]. Another estimate predicts that the funding needed to implement Aichi Target 15 will amount to US\$47.6 billion by 2020 [20]. In light of the total amount of global funding currently available for conservation, such investments exceed the capacities of governments by far, especially those of developing countries, where the largest potential for restoration is found. For comparison, the total amount of non-market funding for biodiversity conservation in developing countries is estimated to range between US\$13 and 16 billion per year [21]. These figures explain why most debates on the targets of the CBD, the UNFCCC and other conventions are intricately linked with those on the mobilization of corresponding funding sources.

The aim of this paper is to provide perspectives on complementary governance approaches for an effective implementation of Aichi Target 15, in particular on a networked approach for the mobilization of resources through private-public partnerships (PPPs). For this purpose, we first provide an overview on what political scientists refer to as an “institutional landscape”—the main international institutions whose work is directly relevant to this policy objective. We then review literature on international relations and environmental governance theories to draw conclusions about elements and aspects of governance approaches suitable for aligning the different efforts and activities of the many public and non-public institutions working on forest restoration. Methodologically, we base our findings and opinions on desk work and an extensive review of the academic literature on collaborative governance. This is complemented by insights from participatory observation at a plethora of land-use related policy events: Conferences of the Parties of UNFCCC and CBD since 2006, the Bonn Challenge [22] in 2011 (described below) and side events at meetings, such as the forest/landscape days, organized by the Center for International Forestry Research [23].

2. International Public and Non-Public Institutions Promoting Restoration

In this section, we illustrate the continuously increasing number of public and non-public institutions whose work relates to the restoration of degraded lands and whose objectives are overlapping. In particular, we consider a specific issue—a phenomenon that is described by political science scholars as a “fragmented institutional landscape” [24]. In this way, we provide the basis for answering the main question of this paper: how can the work and activities of these many different institutions with overlapping objectives be aligned effectively in a complementary governance approach to overcome challenges related to resource mobilization and the implementation of globally agreed upon environmental policy objectives?

Given the trans-boundary effects of environmental degradation, many political efforts have been made to address the continuing trends and consequences of depleting natural resources, especially of global deforestation and unsustainable land uses. As outlined below, the corresponding debates at the international policy level have led to the establishment of many public institutions during the last four decades since the 1972 United Nations Conference on the Human Environment in Stockholm. At this milestone of global environmental politics, governments first recognized the link between the quality of the environment and economic development and established the United Nations Environmental Program (UNEP). Fifteen years later, the Brundtland Commission cemented this link in the globally accepted definition of sustainable development, which, until today, represents the common basis for the many institutions that have since been created to deal with environmental issues; in particular, the prominent MEAs agreed upon in 1992: the UNFCCC, the CBD under the institutional roof of UNEP and the United Nations Convention on Combatting Desertification (UNCCD). Less prominent, state-centered policy processes are the United Nations Forum on Forests, the International Tropical Timber Organization and regional processes, such as the Forest Europe Process or the Ramsar Convention on Wetlands. Next to these government-driven institutions, a large number of intergovernmental institutions work on topics directly related to land use, degradation and restoration, e.g., the Food and Agriculture Organization, UNEP and the United Nations Development Program.

While these examples refer only to public institutions, there is also a plethora of non-public institutions, which are active in the same fields, which contribute to the implementation of policy objectives, as well as influence the state-driven processes and which often form networks and partnerships for achieving shared objectives [25]. In the following, we briefly describe some non-state international institutions that are most directly related to Aichi Target 15, as a result of their global involvement in forest restoration programs, but acknowledge that there are many more that would also warrant being listed.

The International Union for the Conservation of Nature (IUCN) is a network that links more than 900 NGOs and 200 public institutions that associate themselves with conservation of the environment. It is represented in most countries of the world and has the status of an official observer organization at the United Nations General Assembly and many international processes. The IUCN assembles and brokers knowledge and best practices through databases, as well as numerous scientific and science-based publications, and it exerts influence on the negotiations of the international environmental conventions mentioned above. In addition, it facilitates hundreds of conservation, restoration and development projects across the globe. One member of IUCN is the Society for

Ecological Restoration (SER), another global network with members in more than 70 countries, which is dedicated to the science and practice of “reversing degradation and restoring the Earth’s ecological balance for the benefit of humans and nature”. On the global level, the SER has established partnerships with international political processes and regularly provides input to the CBD, the Ramsar Convention and the UNCCD. Furthermore, it is linked to other networks, such as Parks Canada and the Wildlands Network, and has established its own online networks (the Global Restoration Network, the Indigenous Peoples’ Restoration Network and the Community Restoration Network). Through these network activities, the SER bundles existing competencies and provides the knowledge brokerage necessary for the practical implementation of restoration activities and corresponding policy development at different levels.

The Global Partnership on Forest Landscape Restoration (GPFLR) is another network, initiated by IUCN, the World Wide Fund for Nature (WWF) and the Forestry Commission of Great Britain. Guided by ten principles [26], it pursues the aim “to weave a thread through existing activities, projects, processes and institutions to encourage and reinforce the positive roles and contributions of each of them”. The partners are comprised of public actors (donor and beneficiary governments, the secretariats of relevant international policy processes), as well as non-state actors, especially NGOs and renowned research organizations. It catalyzes support for restoration activities at international, national and regional policy levels. Furthermore, it has established a learning network for knowledge brokerage and implementation tools, e.g., the so-called map of opportunity that quantified in a geo-referential map the global potential for restoration and identified main areas of opportunity. Currently, it is being further developed with the aim to refine this global analysis to the national level by combining multiple sources of data, with Mexico and Ghana as pilot countries. Such national assessments allow policy makers, land managers and potential investors to identify relevant local stakeholders for their participation. A similar approach is pursued by the Economics of Ecosystems and Biodiversity (TEEB) Initiative: in 2007, the G8+5 governments agreed to analyze the global economic benefits of biological diversity and the economic costs of its loss. Following this agreement, the German Federal Ministry for the Environment (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, BMUB) and the European Commission (EC) initiated a global study that has resulted in a series of study reports. In the meantime, it has grown into a strong network at the science-policy interface hosted by UNEP, which coordinates national TEEB activities.

In 2011, the BMUB organized, in collaboration with IUCN and the GPFLR, the “Bonn Challenge”, a forum for different stakeholders and forest restoration experts (senior officials of national governments and representatives of the Rio conventions’ secretariats, scientists, NGOs and business representatives). The objective was to contribute, through concrete actions and pledges, to the implementation of Aichi Target 15 and the REDD+ mechanism negotiated under the UNFCCC. IUCN and the company, Airbus, launched at the Bonn Challenge their “plant-a-pledge” campaign, where governments, business representatives and private people are requested and given the opportunity to make concrete pledges. During the Bonn Challenge and in its aftermath, more than 20 million ha have been pledged to date (by Rwanda, USA, Brazil, Costa Rica and El Salvador). Another 30 million ha of pledges still have to be confirmed (India, the Meso-American Alliance of Peoples and Forests) and more countries are expected to follow. In addition, the senate of the German Economy—a business network of large and medium German enterprises—announced during the event its

world-forest-climate initiative, which pursues the objective of finding investors and raising significant amounts of private funding for forest restoration. In addition to these remarkable pledges, the Bonn Challenge has since been mentioned at various high-level political meetings, such as the CBD COP11 in India and the Rio Summit in 2012, where the government of Brazil provided the opportunity for civil society to “vote for the future we want”, and the “Bonn Challenge” goal of restoring 150 million ha by 2020 was only topped by the demand for concrete steps to end fossil fuel subsidies.

As a consequence, collaborative governance approaches, such as public policy networks and partnerships between private companies, governmental bodies and civil society organizations, have rapidly gained momentum since the Earth summit in Johannesburg in 2002 [27,28]. In fragmented institutional landscapes, partnerships can tie together different actors with individual rationales “though a complex web of interdependencies in which collaboration is required to achieve individual and common purposes” [27,29]. This relatively new form of public management of private-public partnerships, or type-2 partnerships, is considered a legitimate alternative approach for poorly implemented intergovernmental agreements [30,31].

3. Theoretical Considerations on Environmental and Networked Governance

During the 1980s and 1990s, the literature on international relations focused on hierarchical, state-led policy processes of MEAs, in particular on the above-mentioned Rio conventions, which were expected to effectively respond to global environmental problems [32]. In this view, scholars consider governments to be the decisive actors in top-down processes, and they seldom attribute a role to non-state actors and institutions that extends beyond “observation” [14]. Indeed, the important watch-dog function of observers does not directly shape the policy outcome; however, their significant indirect impacts and their role in raising public awareness and, consequently, the expectations placed on the negotiating governments is widely recognized [33]. In contrast to the aforementioned hierarchical perspective, modern theories on environmental governance attribute a much more important role to non-state actors and take the view that they can (and should) contribute much more than just ensuring the transparency of governmental behavior in negotiations. In particular, they expect non-state actors to contribute to the legitimacy and accountability of policies and their implementation [34]. The shift in these scholarly debates and related research towards less hierarchical and more inclusive political thinking in global governance was spurred by the fact that during the last decade, high public expectations invested in the outcomes of MEAs were repeatedly disappointed, because governments succeeded, at best, in agreeing on ambitious road maps and policy targets, such as Aichi Target 15. These are important, provided they are accompanied by corresponding initiatives and activities for their implementation.

While hierarchical modes and markets have failed as approaches for environmental governance, a large number of alternative governance modes have gained momentum [33,34], stretching from classical state-driven initiatives over PPPs, to purely private, market-oriented mechanisms, such as certification schemes [35]. In contrast to hierarchical, top-down processes, such as the aforementioned MEAs, these approaches are characterized by reciprocal communication and mutual influence between public and non-public actors [27]. In the following, we describe the elements of these networked governance approaches in order to discuss how they can be aligned with the policy targets of MEAs.

3.1. Partnerships and Collaborative “Networked” Governance

PPPs as organizational structures can be distinguished from networks as a governance mode [29]. Naturally, the many emerging partnerships in the context of global policy-making differ considerably regarding their objectives, structures and character. However, they share the common and distinctive feature of pursuing the implementation of public policy objectives through non-hierarchical transnational network structures, which integrate different actors “within a horizontal structure” [33,36]. Collaborative governance approaches that bundle private and public actors in PPPs are seen as having the potential to generate “outcomes that could not normally be achieved by individual organizational participants acting independently” [37]. PPPs undergo a cyclic development “in which different modes of governance assume a particular importance at different points of time and in relation to particular partnership tasks” [29]: pre-partnership collaboration, partnership creation and consolidation, partnership program delivery and termination/succession.

For the purpose of this paper, the pre-partnership collaboration and the coordination during this phase are of particular interest. Although many renowned and established institutions and networks already work on making restoration a reality, an effective policy network specifically dedicated to the implementation of Aichi Target 15 and overcoming its main challenges has yet to evolve. The pre-partnership phase is “characterized by a network mode of governance based upon informality, trust and a sense of common purpose”, which remains essential throughout all phases and is a decisive factor for its success. Empirical analyses have demonstrated the potential of collaborative governance through “goal-directed” networks; on this basis, they are considered a promising governance approach, especially in public sectors, where collective action and “joined forces” are decisive for success [37]. A policy network itself can serve as a starting point for policy implementation. However, while it “may operate through informal patterns of brokerage and shuttle diplomacy”, it must eventually develop an explicit and formal strategy to qualify as collaborative governance [27].

3.2. Considerations for Network Creation and Design

Ansell and Gash [27] have identified four factors that influence the potential outcomes of networked governance approaches: starting conditions, institutional design, leadership and the collaborative process. Starting conditions refer to the prehistory of cooperation and conflict that determine the level of existing trust, the power-resource-knowledge relationships between the actors and, eventually, the incentives for, and constraints on, cooperation. Incentives are linked to the actors’ expectations and the necessary resources for collaboration: a discernable relationship between individual contributions and tangible outcomes acts as a positive incentive, whereas input limited to advisory or ceremonial purposes is a disincentive [27,38]. In addition, the institutional design and leadership by individual actors have a significant influence on the collaborative process. This process begins with face-to-face dialogue and trust-building that optimally further individual commitments to the process and a shared understanding and eventually result in intermediate outcomes, such as “small wins” and strategic plans for future activities [25].

A network dedicated to achieving a specific target through PPPs can be created through conscious fostering of coordination and cooperation, or it may evolve more spontaneously, when like-minded

actors discover the benefits of collaboration for attaining a common goal; in our case, predefined by Target 15. In contrast to markets or hierarchical governance approaches, the governance of the network itself refers mainly to the coordination of its members and actions, since its main feature is its voluntary nature. If a network is actively established, more deliberative decisions can be taken regarding its format. Based on Provan [37], we briefly summarize three different network designs and outline their characteristics, with emphasis on either decentralized self-governance by the network members without a designated governance entity *versus* centralized coordination by a dedicated lead organization elected by the members or through a newly established administrative organization. The suitability of the design depends on different factors, in particular on the purpose, the size, the stage of development, existing relationships and the level of trust between the members [37]. Last, but not least, the degree of consensus regarding the network's purpose and the capability of the network to assemble the required competencies are crucial prerequisites, because they ultimately determine to what extent the individual members will become involved and remain committed to achieving the network's objectives.

The steering of the network and its activities through its members takes place in the form of regular meetings of all members and other, less coordinated efforts. Self-governance requires a high degree of trust and commitment among its members towards the network objective and is marked by symmetrical relationships among its individual entities, which have to manage both internal and external relationships. The advantage of its high flexibility is only exploited if the network remains small in size; the more it grows, the more difficult it is to achieve efficient coordination. With this, the self-governed network faces the choice of either remaining in a "club-like" setting (maintaining its size and excluding new members) or adapting and adopting a new, more centralized form of network governance, where the administration and coordination of member activities are facilitated by a network member or even an external administrative institution. Coordination provided by a network organization results in a more asymmetrical power relationship, which may result in a loss of trust and even lead to the development of rivalries if the organization is not perceived to be neutral or is seen to abuse its function for its own agenda. A solution could be a shared rotating responsibility, as is practiced, for example, within the REDD+ Partnership [39]; this, however, is associated with a notable loss of efficiency, and for the organizations that assume this function, it restricts network activities and opportunities for engagement. It may be an appropriate solution for an evolving network that has grown beyond a size where self-governance is efficient, provided there is an undisputed consensus on an institution that can and wants to assume this administrative role, or it may serve as an interim solution until an external institution is found. Such independent coordination and sustaining of the network and its activities is appropriate when large numbers of participants are involved. Especially when spread over the globe, frequent meetings of all participants become difficult if not impossible; and as a consequence, they either reduce their commitment and participation, which is detrimental for the potential achievement of the network's objectives, or they are required to spend considerable resources on coordination and collaboration. To avoid inefficiency, especially in light of limited resources, it seems that the network governance approach must eventually be brokered, either through a lead organization or through an independent external institution.

Following these theoretical considerations regarding the prerequisites for collaborative governance, we discuss below the challenges to and options for establishing a policy network dedicated to the implementation of Aichi Target 15.

4. A Collaborative Governance Approach for the Implementation of Aichi Target 15

A growing number of studies emphasize that the value of benefits arising from forest restoration exceeds the necessary investments [40], although some assessments of case studies have shown the contrary. Nevertheless, biodiversity protection and restoration activities continue to suffer from chronic underfinancing. The findings have not yet resulted in an adequate mobilization of public funding, which, until today, represents the main funding source for conservation and restoration activities. The endowment of existing bi- and multi-lateral funding sources, such as the Global Environment Facility, can only cover a small fraction of the funding required, especially for activities in developing countries with the largest restoration potentials [1]. Moreover, in times marked by exploding public debts and financial crises, the reiterated call for new and additional public funding remains unheard. This explains why much hope rests on performance-based payments through a REDD+ mechanism currently negotiated under the UNFCCC, e.g., through a “window” for REDD+ in the Green Climate Fund. It could provide funding for large-scale restoration of forests in the context of the eligible activity “enhancement of forest carbon stocks”. However, this option is still associated with many uncertainties and is unlikely to materialize before 2020, when the next climate agreement is scheduled to enter into force [41,42]. Another long-demanded option for freeing up existing public funding for restoration is to abolish and redirect subsidies, e.g., for agro-industrial purposes or the use of fossil fuels [13]. Such measures could significantly reduce drivers of land degradation and simultaneously enable large-scale restoration, but the political will for such reforms is lacking.

In recognition of the problems associated with mobilizing new and additional public funding, there is a wide consensus among countries that the private sector must be attracted to and effectively included in the provision of funding (not only for restoration, but also for conservation activities) [13]. Including the private sector, however, creates different, but interlinked challenges. Though seldom explicitly acknowledged, the inherent idea behind this call is that the private sector should become engaged voluntarily, and not through regulatory policy means. There are many motivations for commitment—corporate responsibility, marketing purposes or philanthropy—but commitments must be visible, concrete, simple, efficient and without risk to reputation in order to be attractive to private donors. Another motivation for actors in the private sector is the expectation that a real business case could evolve from investing in forests; given that the potential of philanthropic donors is limited and unlikely to reach necessary levels, it is, on the one hand, desirable to explore such possibilities. On the other hand, creating a business case is associated with considerable risks, as the motivation of most investors is to maximize profits, which has to be balanced with the idea of restoration as a contribution to poverty alleviation (not of the investors, but of locally affected stakeholders). Depending on the degree of degradation, the opportunity costs and other factors, forest restoration can be more costly and is likely to generate less revenue from timber and carbon than investments in commercial tree plantations [43]; investors that prioritize return on investments will try to keep costs as low as possible and maximize revenues.

As addressed in the theoretical framework, collaborative governance through a goal-directed policy network appears to be able to respond to these requirements. In our assessment, we have identified existing networks and initiatives dedicated to promoting forest restoration; their notable achievements so far lie in the brokering of knowledge, the development of tools for practitioners, the promotion of the benefits and the connection of this topic with different political agendas. While this has been successful, the imperative of Aichi Target 15 and the true challenge is to scale up the activities on the ground. For this purpose, it appears inevitable that it will be necessary to tap into a variety of private sources, including investors, which have so far been absent from the networks described. One reason for this is that for many potential investors, it is impossible to distinguish “good” forest projects from those that have been criticized for many reasons, e.g., the “commodification of nature”, the disregard for environmental and social aspects, the lack of transparency, and their inherent risks, such as permanence and potential leakage [42,44,45]. In order to dilute existing concerns, a forest restoration business case requires respected and suitable third party certification mechanisms that ensure the environmental and social integrity of the respective activities. Certification is crucial for a number of reasons, but especially in the context of attracting funding, since a major concern of donors and investors alike is protecting their reputation.

In light of these needs, we believe that the existing capacities and initiatives should be bundled through a policy network that functions as a partnership platform and that goes beyond the work of the existing networks: private donors and investors that have so far been largely absent from existing networks need to be attracted and linked into partnerships with those actors that have the knowledge and the capacities to implement forest restoration projects. The different existing networks, partnerships and initiatives (Section 2) demonstrate how many renowned institutions with decades of experience in the field of ecological restoration have effectively organized themselves in different networks, thereby promoting the idea of collaborative governance. These networks serve similar purposes: establishing PPPs, exchanging and brokering knowledge and providing guidance and best practices. Furthermore, they seek to exert influence on decision-makers at all policy levels, and they are very successful in these efforts. Their stated objectives show a wide consensus regarding the benefits of the restoration of degraded landscapes and its contributions to the ecological, economic and social dimensions of sustainable development, for the benefit of present, as well as future generations. In this sense, the expressed missions of the institutions mentioned above reflect a high degree of goal-consensus, a prerequisite for a goal-directed network. This consensus is expressed *inter alia* in the principles that guide the activities of the institutions described above [26], and also in the degree of trust among the leading actors in these networks, which is indicated through the mutual membership. Moreover, network competencies and know-how, another crucial factor for effective collaborative governance, are available in this case.

Naturally, a policy network has no means to prevent questionable forest investments, but it can and must ensure, through explicit goal-orientated consensus and “social control” through its members, that questionable projects cannot be associated with the network or its objectives. The presence of the strong and well-established networks described above suggests that existing structures can and should be used. A suitable forum for initiating such a policy network would be the follow-up to the Bonn Challenge scheduled for the second half of 2014. Furthermore, the network should include governmental officials of recipient countries that are willing to restore their degraded landscapes and

that have the authority to identify priority areas and to help overcome bureaucratic hurdles; in a nutshell, actors who can create an enabling environment for restoration activities. Despite the limited size of the event in 2011, the Bonn Challenge brought together representatives of many key institutions and promoted the idea of private-public partnerships. It has since received much acclaim at high-level policy meetings and has resulted in tangible outcomes and considerable private sector engagement for the implementation of Aichi Target 15 (Section 2). However, with its format as a face-to-face dialogue forum, it can only serve as a starting point for the institutionalization of a policy network that is open to and attractive for new members.

The theoretical considerations suggest some important aspects that should be taken into account when pursuing a collaborative governance approach through such a network. First, in order to ensure effectiveness when a network evolves from a forum and grows, maintaining trust and goal consensus among its actors is a crucial prerequisite. The existing ties and partnerships provide favorable conditions given that all of the institutions described are strongly interlinked and build their work on commonly shared principles that define what ecological landscape restoration actually constitutes. This consensus must be understood and shared by new actors to maintain the level of trust, especially when their core competencies are in fields that extend beyond ecosystem management. Moreover, the idea of creating a business case in addition to philanthropic engagement is found to be worth pursuing. Second, the magnitude of the task creates a requirement for network governance by an external institution, e.g., the GPLFR or the SER; self-governance is inefficient and barely possible. In any case, a small secretariat for facilitating meetings and coordination, as well as the use of modern communication tools should be established. Third, there must be a clear focus on providing incentives for new actors to commit to the network and its activities. This implies that the transaction costs for network participation should be kept at a minimum and allow for tangible contributions to the network's objectives, in concrete implementation projects. For this purpose, and in order to effectively link the network members, the network should establish a partnership platform, which would work like a clearing house mechanism.

A notable example of such a mechanism and its potential is the Life Web platform that was inaugurated at CBD COP9 in Bonn (2008). With its institutional home situated under the roof of the CBD, the Life Web platform was set up to close the immanent funding gap for financing the chronically underfinanced protected areas, particularly, but not exclusively, in developing countries. Its stated mission is "to facilitate financing that helps secure livelihoods and address climate change through supporting the implementation". Recipients (in particular governments) present their funding needs and the relevant information for concrete conservation projects, on a website and in roundtable meetings. Donors, the public and private actors alike can access this information and individually or jointly engage in a highly visible manner in partnerships to implement concrete projects that match their preferences and motivations for engagement. Although focused on the implementation of another (but related) Aichi target with similar funding needs, the "matching platform" of different needs through the Life Web platform could theoretically be broadened and also contribute towards compliance with Aichi Target 15.

5. Conclusions and Outlook

Land suitable for the provision of livelihoods for a rapidly growing global population is limited and already scarce in some regions. Consequently, restoration of degraded lands through the implementation of Aichi Target 15 is an imperative. However, to restore 150 million ha of degraded lands or approximately 20 million ha per year presents extreme challenges, in particular, a considerable need for new and additional funding. Although studies keep emphasizing that the accrued benefits of restoration will outweigh the investments, this policy objective cannot be realized without a joining of public and private forces, given the magnitude of the task and the currently available resources and the persistent problem of tapping into new and additional public funding for conservation and restoration.

In environments marked by resource scarcity and fragmented institutional landscapes, partnerships become “a necessary integrative mechanism” [29] that foster interrelationships, trust and collaboration. Many renowned institutions are already linked in different partnerships and networks related to restoration. They have demonstrated the feasibility of ecological restoration in many projects, have generated a solid knowledge basis and successfully brought the cause to the attention of policy makers at all levels. However, they have not yet sufficiently attracted those actors outside of the conservation community that can make large-scale restoration happen (admittedly a difficult task that requires innovative approaches to secure long-term interest and commitment and that has to be accompanied by high visibility and strong public support). One new and innovative option that will show how far these challenges can be taken up by the private sector may lie in “building forest landscape restoration investment packages”. In this context, the first Bonn Challenge in 2011 was very promising. It has resulted in many tangible outcomes and pledges, but the private sector involvement it triggered has so far been insufficient. A repetition of a similar event as planned will provide the chance for public authorities, which depend on the private sector for the implementation of agreed conservation objectives, to initiate a policy network dedicated solely to the shared objective of making Aichi Target 15 a reality. Such a network could help to further streamline the work of the existing institutions in this fragmented, poly-centric institutional landscape [8] and proactively seek to integrate the private sector in financing its implementation; public funding, still the major source of financing, remains insufficient, and despite different options, it appears unreasonable to expect a significant increase in the short term. Attracting private sources and actors with very heterogeneous motivations for such an engagement could be supported by a partnership platform, such as the Life Web initiative, which works like a clearing house mechanism for specific funding needs. Through its high visibility, it creates an incentive for leadership among recipient countries and donors alike; innovative approaches can then be used by successors who can copy-and-paste the format of successful arrangements.

Collaborative governance through a dedicated policy network is a different approach to relying on a hierarchical top-down implementation by public actors alone. While there is no guarantee for its success, existing approaches have not delivered the expected outcomes. With its flexibility, collaborative governance through networks has significant advantages over cumbersome and bureaucratic hierarchies [37]. In light of the global extent of degraded lands, as well as the need to adapt to climate change and to ensure the livelihoods of a growing population, the objective of

large-scale landscape forest restoration is a matter of urgency and one that requires innovative approaches in order to be achieved.

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Conflict of Interest

The authors declare no conflict of interest.

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