

RESEARCH ARTICLE

The limits of collaborative governance: The role of inter-group learning and trust in the case of the Estonian “Forest War”

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Abstract

Despite the reported success of introducing collaborative governance to the field of Estonian forest policy, conflicts over regulations escalated to an unprecedented extent in 2017. We analyze the institutional design and process of collaborative governance in this area in order to understand the reasons behind the failure of this governance arrangement. Our empirical analysis is based on a mixed methods approach combining network analysis with qualitative analysis of interview data. Our analysis reveals that the collaborative institutions were unable to generate shared understanding of the mission and the ground rules of decision-making, provided uneven facilitation, failed to build trust, and thus were unable to establish an arena conducive to learning. We further stress the role of network methods in capturing adequate information from an institutional setting involving multiple participants.

KEYWORDS

collaboration, environmental governance, Estonia, forest policy, governance failure, mixed methods, network analysis, qualitative analysis

1 | INTRODUCTION

In Estonia, collaborative governance mechanisms have been mandatory in forest policy since putting in action Forest Policy strategy document in 1997. An analysis based on data from 2015 found that “the cooperation between forest owners and environmentalists in Estonia’s forest policy making processes has been relatively good” (Teder & Kaimre, 2018, p. 59). By 2017, however, conflicts in the field had escalated to such levels that the media dubbed the situation a “Forest War” (Lõhmus, 2017; Väli, 2017; Vilbaste, 2018). This conflict manifested itself in the social movement “Estonian Forest Aid” (EMA), which has gathered close to 8000 followers on social media, led to several demonstrations in 2016–2017, and caused a heated media debate. An Internet search for “forestry” in Estonian newspapers

received 96 returns for the year 2014 compared to 773 for 2017. What happened?

We analyze this case as an example of a failure of collaborative governance on a national level to draw attention to the limits of this governance arrangement. It is hoped that collaborative governance strategies will help integrate knowledge from different stakeholders, diffuse best practices, and balance different interests, resulting in adaptive and flourishing socio-ecological systems (Bodin, 2017; Koppenjan et al., 2004; Moseley & Winkel, 2014; Sorensen & Torfing, 2005, 2007). Also, participation in the process of deliberation is seen as an integral part of democratic governance (Butler, 2017). On the other hand, co-governance does not automatically increase the legitimacy and compliance of non-state actors but should be assessed against wider ideals of equal citizenship and public reason (Birnbau, 2016). Participatory ideals are often not implemented successfully (Nordberg & Salmi, 2019), and when they are, participatory governance is fragile and failure-prone, requiring careful and skillful

This article analyses reasons for failure of collaborative environmental governance based on forest policy in Estonia using network and qualitative analysis.

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design and management (Rowe & Watermeyer, 2018; Sorensen & Torfing, 2007). We argue that collaborative governance can manage competing goals and provide win-win outcomes when the demand for resources is low but when demands increase and the resource becomes more contested collaboration is challenged and requires strong institutions for successful functioning.

Estonia offers a particularly interesting case for a “new institutionalist” analysis (Paavola, 2007; Scott & Thomas, 2017). This is because while it has been praised as a successful example of an ex-Soviet state that has adopted stable Western political institutions, it also practices participatory policy making, combining the power of the state with solutions based on voluntary cooperation (Bertelsmann Stiftung, n.d.). Although critical voices have been raised concerning the openness of policy processes to public participation in Estonia (e.g., Lepa et al., 2004), the situation has gradually improved (e.g., Uus et al., 2011). The ongoing concern, however, is that cooperation in policy formation is often “for show” and with little impact despite being legally required and exercised (Rikmann et al., 2019). We argue that the “Forest War” was a result of poorly designed and implemented collaborative governance mechanisms. Haphazard ground rules for decision making led to a situation that failed to generate shared understanding of the mission. This, in turn, resulted in a failure to build trust and hampered reciprocal learning. We demonstrate this by drawing on theories of collaborative, participatory and network governance and provide insights into the influence of institutional design and social-psychological factors on the outcomes of participation.

In particular, we wish to draw attention to policy-learning aspect of cooperative governance (Dunlop & Radaelli, 2013; Harvey et al., 2019) as the crucial element. The management of ecosystems challenges government arrangements because of the contested nature of the problem and the contradictory values, institutional regimes and objectives of the various participants involved (Defries & Nagendra, 2017). This is why it is commonly referred to as a wicked problem. We view participation a vessel for bringing new information to a policy making process that is otherwise inaccessible to the regulators. If this important aspect in collaboration is missing, the whole process is jeopardized. The journal *Environmental Policy and Governance* lately dedicated a special issue to knowledge coproduction (Rodela & Gerger Swartling, 2019). The editorial stressed the need to explore further the links between institutional design, learning outcomes, and their effects on environment. Although several examples exist of collaborative environmental management, fewer examples can be found of cooperative arrangements on the national level (Scott & Thomas, 2017; Yaffee & Wondolleck, 2000). As a small country, Estonia offers a well-bounded example of this kind of high-level collaboration effort.

Ansell and Gash (2008) reviewed studies of collaborative governance and the factors that predict successful collaboration, and they proposed an approximate model for the institutional design of collaborative governance in a process that includes the history of cooperation or conflict, incentives for participation, power and resource imbalances, dialogue, trust, and shared understanding. We contribute

to the model by adding a network analytical layer to their analysis and indicating its relevance to the policy outputs. This layer sheds light on the core aspect of collaborative governance – namely the relations between actors. With our analysis, we aim the answer the following questions:

1. How does collaborative forest governance function in Estonia?
2. What is the relationship between reciprocal trust and learning in the network of participating organizations?

2 | THEORETICAL BACKGROUND

2.1 | Collaborative governance in forest policy

Collaborative governance is an umbrella term for arrangements where public agencies involve non-state actors in a formal, deliberative decision-making process (Ansell & Gash, 2008). Collaborative governance tools are used in all policy domains, but they are particularly prevalent in natural resources management, with a number of applications in forest policy (see Beland Lindahl et al., 2017). Often, this has meant a focus on community-level management schemes in developing countries, but developed countries have also opened up policy-making to outside stakeholders (Maier et al., 2014; Nordberg & Salmi, 2019).

At its best, collaborative governance influences policy outcomes by making the decision-making process easier, more legitimate, and more democratic. This is achieved by balancing actors' interests (Bodin, 2017), thus making governance more accountable, opening policy gridlocks and avoiding litigation (Koontz & Thomas, 2006). In other words, collaborative procedures can be more socially legitimate (perceived as fair by stakeholders and society) and more normatively legitimate (satisfying the democratic norms of deliberation, political equality, and public reason) (Birnbaum, 2016). It is unsurprising, therefore, that stakeholders view participation positively, despite the fact that the participation process may not have an effect on the participants' ideologies and interests (Maier et al., 2014; Teder & Kaimre, 2018).

An integral part of collaboration is integration of knowledge from different knowledge systems and generation of new knowledge through social learning (Bodin, 2017). Learning, in turn, increases the legitimacy of outcomes, as they are perceived as more desirable or more fitting to normative standards, such as justice (Birnbaum, 2016). Nevertheless, policy learning is challenging, even when participatory processes are well designed. For example, a study of different locations in Germany (Sotirov et al., 2017) investigated whether participants' beliefs, values and cooperative behavior changed when they were forced to engage in “forward thinking” during the participation process, that is, considering the long-term development of forests. They found that only some strategic learning and no substantial learning occurred. This lends support to the claims that collaborative governance does not work in highly contested and high-risk areas.

Therefore, at its worst, collaboration may lead to discrepancies between written regulation and policies, on the one hand, and actual

governance practices on the other – a sort of “window dressing” instead of accountable governance (Raitio & Harkki, 2014). Furthermore, in the context of Bulgaria and Germany, Winkel and Sotirov (2011) found that participation strategies had little effect on outcomes and actual practices because participatory governance either engaged environmentalists in lengthy and futile negotiation processes or simply created policy access for donors and powerful actors. Thus, cautionary examples of failures of collaboration and situations where failure is expected are plentiful (Ansell & Gash, 2008; Bodin, 2017). Consequently, collaboration should address the question of accountability alongside that of policy learning. The success or failure of learning in collaborative governance depends on how the initiating governing body establishes the process – the institutional design – and aspects of the process: leadership and accountability. We discuss these two issues in the following sections.

2.2 | Institutional design: Arenas, rules and leadership

The main component of collaborative design (Torfing & Triantafyllou, 2016) that influences the success or failure of cross-sectorial collaboration is the creation and maintenance of arenas for interaction. Arenas are venues within policy networks where negotiations are held and which provide the desired outcome – legitimacy, learning, social capital and trust (Ostrom et al., 1994). They include, for example, committees, conferences and round-tables (Koppenjan et al., 2004).

Rules influence the choice of participants in the arenas, their positions and actions, the use of information and control, as well as the outcomes of strategic behavior and the whole arrangement (Ostrom, 2005). If there were no rules, the result would be a Hobbesian state of nature where common good is extremely unlikely to emerge (Ostrom, 2005, p. 211). Moreover, it can be argued that rules should be in place to force participants to learn from each other. It is crucial that participants recognize mutual interdependence, as this facilitates joint production of meaning (Koppenjan et al., 2004). Ansell and Gash (2008) review characteristics of successful arenas and conclude that such arenas need to be inclusive, in the sense that they must include all the affected stakeholders; at the same time, however, they should be exclusive, in that they must be sole forum for discussing the issue at hand, with no alternative venues for bypassing them. Participants must both believe that a stalemate is undesirable and also refrain from utilizing other venues for achieving the results than the negotiations at hand (Leach & Sabatier, 2005). Otherwise, participants may block cooperation. The situation where a network of actors blocks either some ideas or some actors is called “closure” (Kickert et al., 1997; Schaap, 2007). In this case, participants may use alternative strategies to achieve their goals, such as expanding the network to include new actors or forming coalitions within the network.

A working arena requires good leadership (Ansell & Gash, 2008; Scott & Thomas, 2017). The governing body delegating its decisions to collaboration should act as a facilitator, organizer, encourager, and

network-broker. Moreover, leaders must mediate and give a voice to participants in order to enable the synthesis of ideas from different organizations. Nonetheless, they must also introduce and follow rules that are recognized by other state institutions.

2.3 | Collaborative process: Learning and trust

Even in an arena that is effectively established, problems can occur in the collaborative process itself. The co-production of learning often requires meticulous design and attention to detail from the institutions that create it, and even then the transformative nature of new knowledge may be limited (Harvey et al., 2019). Nonetheless, Ansell and Gash (2008) describe a virtuous cycle of collaboration, where good process outcomes complement each other. The parts of the cycle are commitment to process leading, the building of a shared understanding of the mission, small wins through intermediate outcomes, good-faith face-to-face negotiation, and trust-building.

In settings with conflicting interests, institutional arrangements are expected to create trust between participants and, through that, enable learning. For a thorough overview of trust and its effects on cooperation see Klijn et al. (2010); however, we highlight some relevant points here. First, one of the most widespread definitions of trust is the “willingness of a party to be vulnerable to the actions of another based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (Mayer et al., 1995, p. 712). Trust has been extensively studied with game theory, and the results indicate that without a single central power, trust is a *sine qua non* for any Pareto efficient solutions (Axelrod, 1984), because trust allows participants in collective good management to refrain from egoistic behavior by reinforcing the belief that other participants will do the same (see Pöder, 2010 for practical applications). Trust creates predictability regarding others' behavior, which is central to planning one's own strategy.

Trust and learning are intrinsically connected because trust influences how we gather and process information. Trust in people eventually influences trust in the information they convey. We tend to accept information more easily from trustworthy partners and question information from partners we do not trust. On the one hand, it influences our perception of the source of information. For example, Dunlop and Radaelli (2013, p. 602) argue that one of the central axes around which learning can be systematized is the “certification of actors.” This concerns whether “teachers” have legitimacy and can be trusted. They observe that often it is the institutional structures (organizations, procedures) that provide these qualities. On the other hand, trust enhances participants' capacity to incorporate information. For example, Murphy et al. (2012, p. 1700) demonstrate that trust increases the “absorptive capacity” of firms, that is, the “ability to recognize the value of new, external information, assimilate it, and apply it.” In other words, trust is especially important in situations where we lack knowledge of the issue (Paglieri & Castelfranchi, 2014). In such cases, the only alternative is to rely on interpersonal trust. Paglieri and



Castelfranchi (2014) base their argumentation on Tuomela and Tuomela's (2005, p. 71) idea that “[w]hen knowledge is lacking, trust is needed for cooperation.” Ecosystem management has been described as exactly the kind of situation where precise knowledge is lacking and conflicting values discourage technical top-down solutions for knowledge creation (Bodin, 2017; Defries & Nagendra, 2017). Therefore, new knowledge can be created only in conjunction with trust. In addition, Butler (2017) addressed this question from a philosophical perspective, arguing that deliberative democracy cannot achieve legitimacy without an epistemic learning process.

How, then, is an atmosphere of learning created in the policy process? First, participants must be able to discuss their “core beliefs” (Leach & Sabatier, 2005, p. 494). This means that sufficient space is created for discussing the values upon which the participants base their normative requirements. Second, there is a need for a neutral mediator in the negotiations. The task of the mediator is, among others, to force competing coalitions to justify their claims with scientific, quantitative data. If joint production of meaning is discouraged, an agreeable policy outcome is unlikely to occur (Harvey et al., 2019; Leach & Sabatier, 2005; Weible et al., 2009).

Few studies have directly measured trust or other relational qualities between governance network partners (Peters et al., 2017). Usually, what is measured is trust in general and how it influences the outcome of participatory (environmental) projects (e.g., Barroso-Méndez et al., 2016; Klijn et al., 2010; Leach & Sabatier, 2005). Measuring generalized trust and learning, however, fails to reveal who actually trusts and learns from whom in collaborative settings. This can lead to skewed understandings of collaborative processes and create false security by confirming that something, indeed, was learnt.

3 | DATA AND METHOD

Since we are interested in several inter-connected and context-specific aspects of collaborative governance, such as institutional design, trust and learning, we apply a mixed methods approach (see Saunders et al., 2010 for argumentation and examples of this approach). Thus, we combine social network analysis (Jackson, 2008) with qualitative strategies.

For gathering information about reciprocal trust and learning, we conceived a name-interpreter questionnaire (Carrington et al., 2005) with a list of all organizations that were mentioned in the preliminary interviews and document analysis. The questionnaire was answered by 27 respondents who were either heads of their organizations, or, in case of ministries, civil servants involved in forest policy field. Respondents were able to add organizations to the list if necessary. This gave us a total of 45 organizations. For every organization, each respondent was asked to rate, on a Likert scale, one independent quality (perceived power) and four reciprocal qualities. These were intensity of interaction, information received, information given and trust. Trust was operationalized with the question “How much do you trust that the organization would take your point of view into consideration if forest policy were entirely their responsibility?” In turn,

learning was operationalized with the question “How much useful information do you get from this organization?”

The questionnaire data was analyzed using the *ggraph* (Pedersen, 2018) and *igraph* (Csardi & Nepusz, 2006) packages of software R. The network survey allowed us to identify 44 organizations with an interest in Estonian forest policy. Thirty of them were core members with multiple mentions and multiple ties. By contrast, 15 actors were mentioned only once and had a narrower interest in forest policy (such as the Roads Administration, Farmers Union, Academy of Sciences etc.). Consequently, these were excluded from the statistical network analysis for the sake of clarity.

We use cluster analysis to find groups of organizations that trust each other and learn from each other. We use an optimal clustering algorithm (Brandes et al., 2008) that maximizes the strength of links within each cluster and minimizes the strength between clusters. We then measured the average in-group and out-group “trust” and “learning” relationships. Exceptionally, we positioned the Parliament (RK) in a separate cluster in order to stress its role as the overarching political organization (e.g., the commissioner of the Forest Development Plan [FDP]).

The qualitative analysis used interview data, complemented with grey literature. Out of the 27 respondents of questionnaires, semi-structured interviews (Brinkmann, 2014) were conducted with 19 people. These interviews covered the topics of recent changes in forest policy, the background of these changes, the functioning of significant arenas, and relationships between organizations. As our goal was data saturation, several people were interviewed multiple times, as new questions arose during the data analysis. The interviews lasted between 1 and 2 h and were recorded and transcribed. Grey literature included policy documents, reports and studies commissioned or published by organizations in the policy network, most importantly by the Ministry of Environment.

The semi-structured interviews were analyzed using thematic analysis (Guest et al., 2012), which combined deductive and inductive coding.

4 | BACKGROUND OF ESTONIAN FOREST POLICY

The development of Estonian forest policy after the restoration of independence in 1991 is an explicit example of an attempt to establish collaborative governance. Moreover, it is the first policy area in which the Estonian government applied this kind of governance after the collapse of the Soviet Union. Indeed, as the head of State Forest Management Center (RMK), Aigar Kallas, also noted in 2002, the Estonian Forestry Development Program (begun in 1995) introduced “an entirely different concept – a tradition of open and transparent policy-making – into Estonia's forest sector” (Kallas, 2002, p. 327). Several non-state actors were included in the policy process, such as environmentalists, hunters, and scholars (see Kallas, 2002; Sootla, 2004 for overviews of the Development Program process).

The Development Program concluded by reforming centralized organizations remaining from the Soviet period into agencies with varying tasks and by Parliament accepting the Forest Policy in 1997 and the Forest Act in 1998. The former, a strategic policy document, established the principles of forestry, such as sustainability and efficiency; the need to consider economic, ecological and socio-cultural criteria of forests and forestry when planning legislation; and, along with the latter document, the need to incorporate non-governmental organizations into drafting legislation in order to achieve these competing goals through collaboration.

The Forest Act also established that Estonian forestry would be guided by the Forestry Development Plan (FDP), written by the Ministry of Environment with the participation of relevant non-governmental actors. The plan is renewed every 10 years (FDPs were written in 2002 and 2010, with a third initiated in 2019 and not yet completed) and is the main policy tool that determines, among others, felling volumes and rules. The collaborative aim of the FDP is reflected in the formation of two main arenas that serve as inputs into the policy process: the temporary committees for the creation of the FDP and the semi-permanent Forestry Council (FC). Combined, these arenas incorporate almost all forest policy-related actors (see Appendix A).¹

FDP committees were formed in 2001, 2009, and 2018. The committee consists of representatives of ministries, industry, private forest owners, environmental protection agencies and universities and is responsible for formulating the main decisions in the FDP. The lead committee of the FDP included 10 members in 1999, 12 members in 2010 and 28 members in 2018. By contrast, the FC is an advisory board for the Minister of Environment with the formal task of monitoring the implementation of the FDP. It is the only official cross-sectoral discussion arena for forestry-related questions and planning that functions in-between FDP committees. Although formally each minister establishes his or her own FC, the council has remained relatively stable in its membership. Its meetings are semi-regular and called by the Undersecretary of Forestry. The FC consists of 12 members.

It must be stressed that although the indispensability of FC and FDP are not contested among practitioners, note that there is no legal obstacle in changing forestry legislation and policy outside FC and FDP. For example, the Minister of Environment can establish felling volumes for RMK with his/her decree. Also, while both the FDP and FC function as a source of policy change, such changes, and also the Development Plan, require parliamentary approval. Teder and Kaimre (2018) observe that members of arenas see themselves, somewhat erroneously, as decision makers. Nevertheless, as discussed above, although decisions are formally made on the Parliamentary level, agreements reached in both arenas are seldom significantly changed in the later policy process. The FDP routinely triggers amendments to the Forest Act, and discussions in the FC may also lead to regulation change.

Since 1999 the Forest Act has been changed more than 20 times, including re-writing the text thoroughly in 2007. Legislation changes until the economic crisis considered environmental needs, for example in 2004, forest management plans were made mandatory in private forests. However, the economic crisis of 2008 marks an important turning point in the forestry processes. A legal analysis conducted in 2013

(Environmental Law Center, 2013) found that since 2008 all the changes have deregulated environmental constraints and have thus been beneficial to the timber industry. As a result of the changes in 2008, “increasing felling volume and improving the position of forest owners gained such weight” that it called into question “the level of thoughtfulness and the balance of different interests.” Moreover, they conclude that this was “particularly visible in the question of selective cutting” (p. 74). According to the interviews and grey literature, the de-regulation (such as removing the requirement for forest management plans in 2008 or enlarging clear-cutting areas in 2014) was intended as a response to the difficulties created by the global economic crisis. Apparently, these measures were successful, as indicated by the doubling of net revenue of forestry enterprises in 2011, from 60 M Euro to 120 M Euro (Estonian University of Life Sciences & University of Tartu, 2018). Since 2008, felling volumes have more than doubled (see Figure 1).

So, Estonian forestry in the post-2008 crisis period was characterized by increasing demand for timber, but also the increase of recreational forest use. On the one hand, according to the Statistic Estonia, forestry and timber industry has invested 1.57 billion euros in 2013–2017 and is now creating annual revenue of ca. 5% of Estonian GDP. On the other hand, other types of forest uses have been also growing and creating new expectations for forest use. For example, the number of visitors at public forest recreation areas has increased from 1.7 million in 2013 to 2.7 million in 2018 according to RMK (State Forest Management Center, 2018, 2019). Increased interest in sacred natural sites in forests lead to a joint declaration demanding their mapping and protection by Ministry of Culture and National Heritage Board in 2015. Parallel to this, public opinion that forestry in Estonia is sustainable has dropped more than 8% since 2012, the biggest drop among various environmental fields studied (Turu-Uuringute AS et al., 2018). Our interviewees suggested that extremely warm winters might be the contributing factor to the public opinion change, because it favored felling nearer to public roads due to the inaccessibility of wet forests and increased damage to the soil caused by harvesting machinery. Thus, it can be argued that public attention, at least in part, has been amplified by increased recreational use of forests and climate-change-related factors.

This created the background for two important processes in 2016 that directly contributed to the “Forest War.” First, RMK introduced a proposal to the FC to lower the felling age of spruce (*Picea abies*) on fertile soils from 80 years to 60 years. Second, planning of a 1-billion-euro timber refinery in Estonia was made public. Both of these processes became the central issues behind wide-scale protest on national and local levels. In that year, the social movement EMA was mobilized, with heated media debate and demonstrations following at the end of the year (for a more detailed discussion, see the results section below).

5 | RESULTS OF QUALITATIVE AND NETWORK ANALYSIS

We now analyze the institutional design and process of collaboration in order to understand why the collaborative partners were unable to

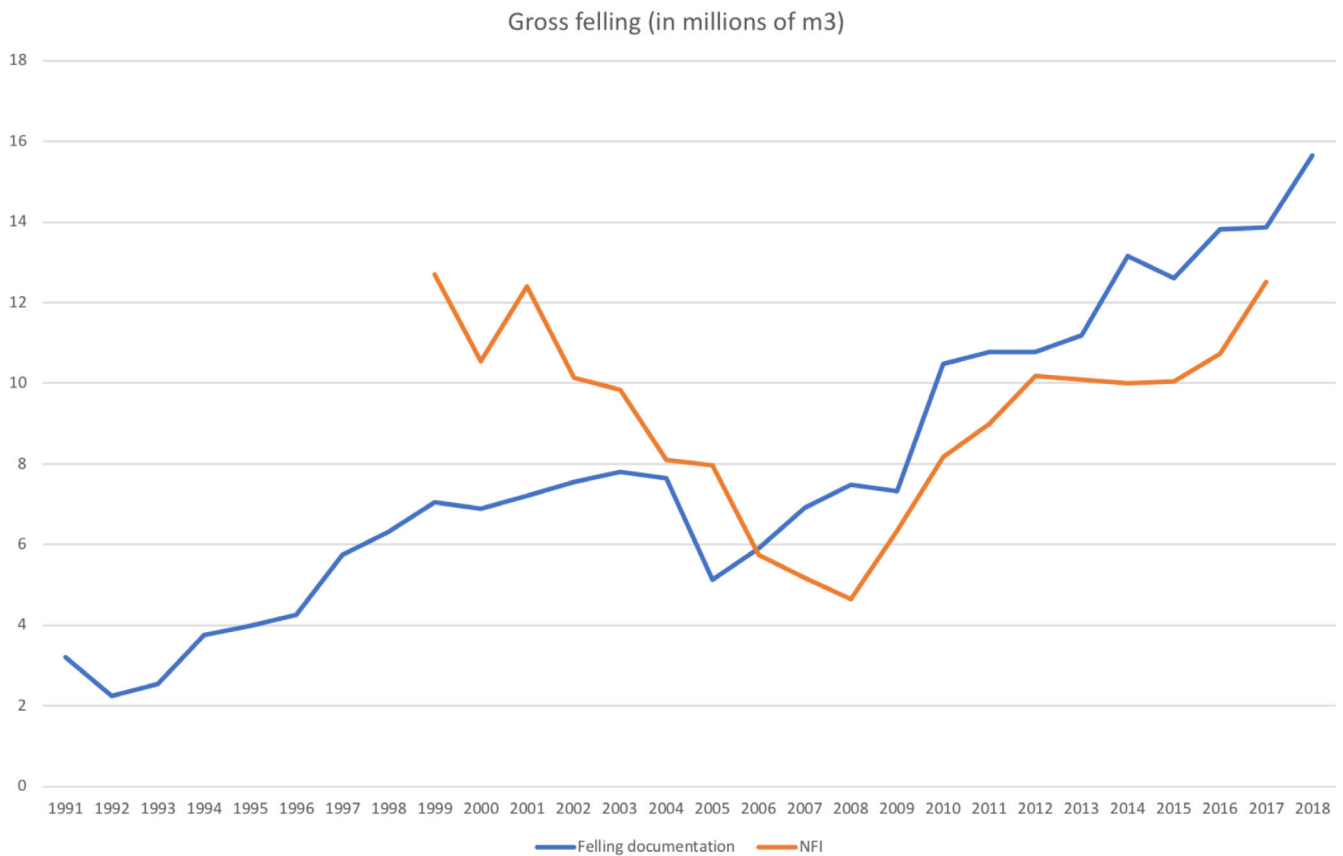


FIGURE 1 Annual felling volumes in Estonia based on official felling documentation and National Forest Inventory (NFI).
Source: Statistics Estonia [Color figure can be viewed at wileyonlinelibrary.com]

respond to mounting tensions. Here, we focus on the post-2008 years that roughly correspond to the period of the last FDP (2010–2020). Especially important are the years that follow the analysis by Teder and Kaimre (2018), who conducted their empirical work in 2015, because this is the period that led directly to the “Forest War.” We build on Ansell and Gash’s (Ansell & Gash, 2008, p. 550) model of collaborative governance to analyze both the institutional design and the collaboration process.

5.1 | Institutional design

First, we address the issue of the formal setup of collaborative governance. In Estonia, the list of actors can be considered inclusive, with our analysis revealing 44 organizations that constitute the Estonian forest policy field. During the time that led to the “Forest War,” both the FDP and FC included the core group of these actors. Thus, both arenas reflected a variety of interests and opinions. Besides government organizations and universities, umbrella organizations for private forest owners, timber industries, forest workers, and environmentalists were also present.

Nonetheless, this inclusiveness was not always consistent and was occasionally debated. For example, during the FC meetings in 2015 and 2016, no representative of environmentalists was present

because the person assigned to the council no longer worked for the environmental NGO in question. Consequently, that organization failed to receive invitations. According to the minutes of the meetings, this was not raised as an issue. However, membership of the FC was the subject of debate after a controversial proposal by the RMK. Here, environmentalists highlighted the fact that social and environmental issues were under-represented in terms of the number of organizations involved in the FC. As others pointed out that the FC functions by consensus, the number of representatives was ultimately deemed irrelevant.

Our interviews and document analysis reveal, however, that no formal agreement exists on the rules for reaching decisions in the FC. Nonetheless, in the interviews, the participants agreed that decisions were taken in a deliberative manner and different opinions were accounted for. As one of the key civil servants stated in an interview, the Ministry was accustomed to cooperation between organizations running smoothly, so they saw no need for the establishment of formal procedures.

The decisions we make there, we try to achieve consensus. This is of course not a place where financing is decided. We decide what kind of advice we should give to the Minister. And we look for common ground. So there are no strict rules. The only rule is that we

look for partners among stakeholders. (Interview with a regulator)

Nevertheless, the agenda setting rules of the arenas were opaque, and, in the interviews, the environmentalists frequently raised this question as problematic. Moreover, the “level of discussion” – a proxy for the depth of the issues on the agenda – was characterized as technical, with little debate on core policy beliefs (Leach & Sabatier, 2005). Furthermore, the source of the agenda was not publicly discussed, although the topics were often highly significant, such as the maximum clear-cutting area, minimum felling age, and carbon sequestrating. Formally, the agenda was set by the Forestry Department of the Ministry of the Environment. However, the interviewees speculated that the topics for discussion at the Council arose from the management problems of the RMK. This organization runs a large-scale operation, since they manage close to 50% of Estonian forests.

It seems to be a legitimizing mechanism for the Ministry.... The main direction is that they pick up a problem, frame it as if some participant has presented it and then order research if needed. And then we discuss it at the Council. But there is the question of the adequacy of the question. I think the discussion should be at an earlier stage. (Interview with a scientist)

Hence, our analysis indicates that the rules of the arenas were neither clearly set nor followed. Moreover, although formally inclusive, the participation of important actors was often disregarded.

5.2 | The collaborative process

The institutional design set the stage for a collaboration process that deepened the inherent problems of cooperative governance. The rules of agenda setting are intrinsically connected to the use of expertise and scientific knowledge in the FC. Thus, instead of “common fact finding” (Ansell & Gash, 2008), our interviews and FC meeting transcripts indicate that academic analysis was often ordered to support a certain position rather than to study a problem in depth (e.g., the felling age of spruce, clear-cutting area, carbon sequestration). In most cases, fundamental research questions were not addressed, and thus scientific consensus was not achieved.

In a way, the Ministry does the right thing. It asks an academic institution for an analysis. But in what way it is asked and how fast it is done and what is the outcome? It has clear signs of political order. I think the discussion should start where we discuss the fundamental problem. I think the Forestry Council should decide that in one question or another we need a decent scientific foundation. How should we get it? And this never happens. And nine times out of 10 it is a problem for ecologists. (Interview with a scientist)

The dubious transparency and inclusivity of the FC raised questions about the leadership and brokerage position of the Ministry of Environment. The Forest Policy strategy document of 1997 states that forestry should be “sustainable” and that different aspects of forestry – industrial, environmental and social – should receive equal weight in forest management. Thus, theoretically, the ministry could have taken decisions that equally reflected the positions of the different organizations involved. Yet, environmental groups regularly criticize the ministry in the media for favoring industry (e.g., already before the Forest War Kuresoo, 2013, more recently Tüür, 2019), and, in the interviews, they criticized the ministry in the collaboration process.

The [regulator] doesn't listen to the arguments of counterparts.... She cannot see that she is one of the parts in this conflict. A lot of this conflict is about these rigid standpoints. And perhaps they don't understand that because this conflict has lasted for so long there is not trust in them. All that we can read now – documents or interviews – are ridden with conflict and distrust. If the things that are written in the ministry documents were written by a neutral participant, perhaps they would be easier to digest but because there are so many negative experiences by environmentalists with the ministry they cannot be read neutrally. (Interview with an environmentalist)

The environmentalists argue that the ministry is not acting as a neutral facilitator who gives a voice to all parties. Some industrialists even argued that the ministry should not attempt any facilitation at all, as they were feeling certain their arguments will prevail. This led to tension and low levels of trust between the participants. This tension reached its zenith with the proposed change to lower the felling age for spruce in specific fertile soils. The argument advanced by RMK was that in such soils spruce begins to rot before it reaches its current felling age of 80 years. Thus, they proposed that the age be lowered to 60 years. This produced outrage among environmentalists and was criticized even by some industry figures for being too aggressive.

When we discussed the lowering of the cutting age for spruce, we had divided opinions. Environmentalists were quite opposed to this; for industry people, it was completely reasonable to cut them before they rot. Well we could have done this anyway, but this change would have simplified the bureaucracy. And I remember there were those who said, “Let's not poke this. This is the wrong signal. We can cut these trees anyhow. This is the wrong signal if we start cutting young spruce. There could be trouble!” And those who said it were prophets! (Interview with a civil servant)

In order to convince the environmentalists, the Ministry proposed an increase in protected forest areas in those fertile soils. From their



perspective, it was a quid pro quo proposition. What made the offer controversial, however, was that the FDP 2010 had already included an increase in such areas, which had never been put to practice. Hence, in the official transcripts, the issue was framed as “missing protected areas.” Moreover, although the ministry announced the creation of the protected areas in 2016, the measures were not immediately implemented. This time lag between the ministry declaring the lowering of the felling age of spruce and finalizing the creation of the protected areas resulted in heated negotiations among environmentalists. For instance, the NGO Estonian Fund for Nature (ELF) assembled a round table to discuss the current situation in the forests and the possibility of influencing the ministry's decisions. As a result, a journalist at the meetings became the leader of a new social movement, and, at the end of 2016, the first demonstrations were held in front of the Ministry of Environment. Later that year, the planning of the timber refinery in Tartu mobilized local demonstrations in an unprecedented scale, contributing to the overall visibility of forestry issues. These two causes for protests converged and fueled each other. Although the areas under question were eventually protected in the fall of 2017, by then the social movement had gathered momentum. Thus, the reduced felling age was one of the main events behind the formation of the social movement EMA. It can be read as an instance of cognitive closure (Schaap, 2007), as the criticism was blocked and diverted at the FC.

5.3 | Forest policy network

Next we provide a network analysis of Estonian collaborative forestry governance in order to indicate that all of the above issues are reflected in the relationships between organizations. The 29 core organizations that influence Estonian forest policy are connected in an interaction network with a density of 0.56. These organizations are centered on the Ministry of Environment, which interacts with almost all of them (degree centrality = 113). It has also the highest perceived power to influence policy (avg. = 4.8). The second most central organization is the main environmental protection body, ELF, with a degree centrality of 81. The latter is also the main actor in the environmental protection umbrella organization EKO. The two most powerful organizations besides the three state organizations – the Parliament, which ratifies the development plan, the Ministry of Finance, which influences the plan through budgetary constraints, and RMK, which manages about half of Estonian forests – are the Private Forest Union and the Woodworking Industry Development Cluster (means of 3.6 and 3.3 respectively).

It is noteworthy that no correlation was found between the organizations' perceived influence on policy outputs and their interaction centrality ($r(17) = 0.06$). This indicates that influential participants in policy making were not necessarily central to the interaction, lending support to the argument that the collaborative process lacked the ability to commit the actors to the collaboration process, a feature that is significant for the success of collaboration efforts (Ansell & Gash, 2008; Kickert et al., 1997; Schaap, 2007). It also confirms the

qualitative finding that the arenas lacked exclusivity. Thus, powerful actors may have other channels to influence political decisions. Furthermore, our analysis revealed that although there is dense interaction between most organizations, the quality of that interaction in terms of trust and learning is highly differentiated, as shown in the following sections.

5.4 | Network of trust

It is evident from the qualitative analysis that the clusters of organizations are formed along the often-sighted division in environmental governance: forest as a raw material for industry or forest as part of a fragile ecosystem. The following network analysis shows that neither the institutional design nor the collaborative process was able to create trust among the participants of the quarreling groups. Moreover, although the majority of FC members enjoyed high reciprocal trust, this excluded two members: EKO (the umbrella for environmental organizations) and the University of Tartu, which is represented at the FC by an ecologist. Cluster analysis of the larger policy network indicates that, in terms of reciprocal trust, there exist two major clusters: one that includes industry-related and most state organizations, and another that includes environmental organizations (Figure 2). Only the Ministry of Culture, Animal Protection Society and an NGO EcoState Estonia that promotes sustainable development form a separate mini-cluster.

5.5 | Network of learning

Cluster analysis based on the “learning” relationships largely preserves the topography of the “trust” network, although it is more fragmented (Figure 3) as the organizations are more evenly divided between three clusters. The cluster with environmental organizations now includes also Ministry of Culture. This supports the idea that cultural heritage protection in the forests is among the challengers of current forest use. Second cluster is formed by organizations representing the forestry industry, state environmental agencies and RMK. This confirms shared understandings about forest use that was indicated with the “trust” network. The third cluster incorporates four ministries (Environment, Rural Affairs, Finance, Education and Research), Government Office, Forestry School and EcoState Estonia. Both network data on learning and interview data indicate that organizations are forming distinct clusters regardless that FC includes members of different clusters. Hence our conclusion is that FC as a platform was unsuccessful in creating learning relationships between its members.

It is notable that two universities inhabit two separate “learning” clusters. University of Life Sciences (EMÜ) is represented in the FC by forestry experts whereas University of Tartu (TÜ) is represented by an ecologist. This signals that the collaborative process has failed to encourage common fact-finding between different branches of science, and, rather, plays these approaches against each other. Although in 2018 the study commissioned by the Ministry of Environment in preparation of the FDP 2030 was written jointly by the two universities in

FIGURE 2 Clusters of trust in Estonian forest policy network. Forestry Council membership is highlighted. The numbers denote average trust between cluster members. Arrow direction indicates how much that group of organizations is trusted

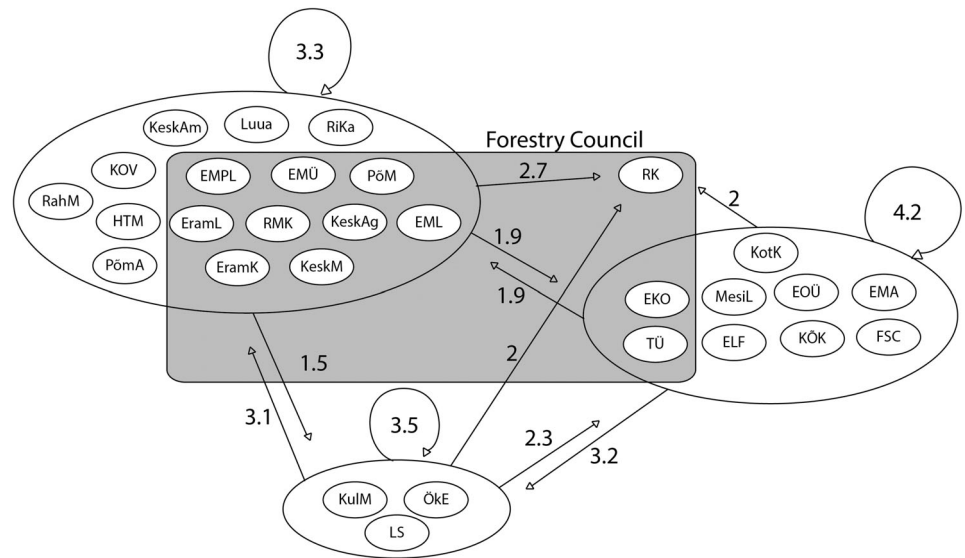
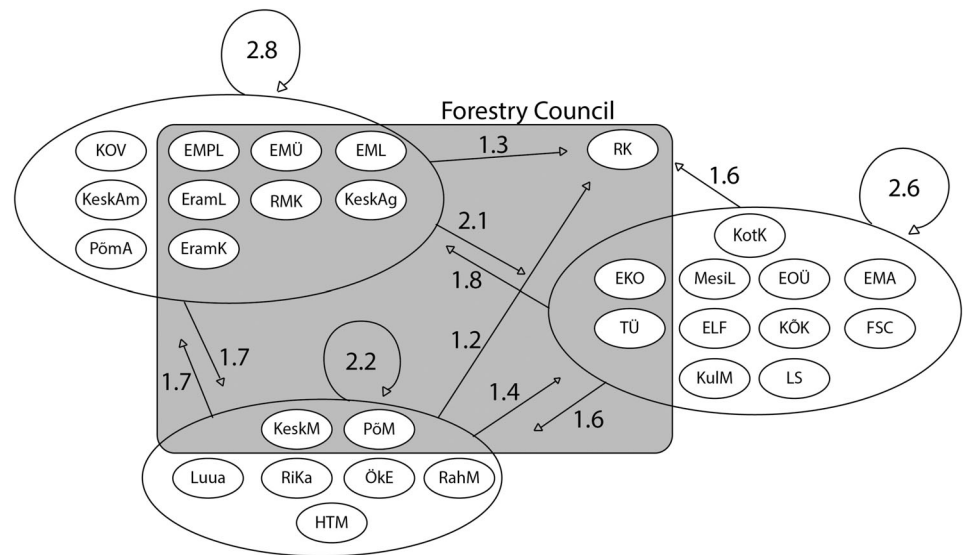


FIGURE 3 Clusters of learning in the Estonian forest policy network. Forestry Council membership is highlighted. The numbers denote the average learning relationship between cluster members. Arrow direction indicates how much that group of organizations is learnt from



the policy network (Estonian University of Life Sciences & University of Tartu, 2018), experts characterize this text as fragmented and without synthesizing conclusions. Our analysis confirms that this attempt of collective learning did not change the overall lack of it. The criticism of FC members towards the lack of scientific consensus was discussed above, and this is further reflected in the widely shared attitude within the forest policy network that there are “winners” and “losers” among the scientists involved in the “Forest War.” Moreover, the impartiality of scientific expertise is questioned. In the interviews, this was characterized by referring to scientists “who came second.”

I think the Minister of Environment correctly stated during the writing of the Forestry Development Plan that scientists should say what is the correct figure or what are the correct decisions.... Scientists should come to an agreement. But things went wrong because the scientists who came second went to the streets and started fighting

for their positions there.... So, who do we trust? I mean science that is actually someone's opinion is not science. (Interview with a representative of industry)

Note that in the excerpt above the representative of industry advocates a technocratic solution to the question at hand. This infers that scientific claims are given credibility by political decisions (“correct” figures were decided upon while writing the Development Plan, which renders alternatives “non-scientific”). This further indicates a lack of learning from different sources information and the inability of the process to create new knowledge.

6 | DISCUSSION

In this article we have presented the failure of collaborative governance in the face of increasing demands for forests from economical,



ecological and cultural fields. Despite the earlier processes in the 1990s, which laid the foundation for the collaborative governance of forests in Estonia, the conditions no longer favored balanced power relations and bona fide collaboration in the aftermath of the 2008 economic crisis. Changes to the legislation largely favored industry, while increased demand for other forest services (such as conservation, recreation, or cultural heritage) made the field more contested. In the face of heightened tensions, the official arenas created to facilitate cross-sectorial discussion for forestry-related policy and planning exhibited problems in their design. These arenas lacked forum exclusiveness, clear rules and process transparency (Ansell & Gash, 2008). This resulted in a collaborative process that failed to build reciprocal trust in the policy network. Cluster analysis indicates the existence of two major clusters with high in-group and low inter-group trust: one that includes industry-related and most state organizations, and another that includes environmental organizations. We consider the lacking trust between collaboration partners as the fundamental factor that limits opportunity for successful policy processes because clusters in the “learning” network largely overlap with ones in the “trust” network. Qualitative data reveals that although issues were debated and scientific evidence was presented, no real effort was made to discuss core policy beliefs (Leach & Sabatier, 2005) or introduce common fact-finding (Ansell & Gash, 2008) by collaboratively and systematically setting up research agendas to inform policy decisions.

The destructive influence of lacking trust is best exemplified by the situation in 2016 when the proposal to lower the felling age of spruce in exchange for expanded conservation areas failed to reconcile the warring factions and, instead, led directly to action outside the formal arenas (demonstrations and the creation of the social movement EMA), marking the beginning of the “Forest War” despite the participants of collaborative governance being generally satisfied with their involvement (Teder & Kaimre, 2018).

Our analysis of Estonian forest policy sheds light on the intense relationships between knowledge, trust and collaborative policy-making. We recognize the difficult position of policy makers who have to navigate the public demands for accountability from various directions with highly contradictory values and objectives (Defries & Nagendra, 2017). In the case of Estonian forestry, pressure came from climate change, the global economic crisis, increased need for cultural and recreational forest use. Under this pressure, institutions that were intended to encourage mutual learning failed in their task. We would like to draw two theoretical conclusions based in this data.

First, our material indicates that when the pressure for resource use increases, so does demand for design and leadership of collaborative governance. With this we directly build on Ansell and Gash (2008) who draw attention to previous history of conflict or collaboration as a factor that influences demand for facilitating leadership. In common language, collaboration can refer to very different practices from simply informing someone to discovering new goals through deliberation. When the demand for a common resource is low, this haziness of the language and procedures does not pose a problem. Previous studies

of inclusion of civil society into policy making in Estonia has shown how lack of real willingness to deliberate and to adapt to the demands of stakeholders does indeed create protest, but without significant consequences (e.g., Lepa et al., 2004). In forest policy so far, Estonia has been blessed with ample resources that have been able to provide various benefits to timber industry, nature tourism, cultural use and still been able to accommodate flourishing biodiversity.

However, when the pressure for resource use rises, collaboration as a tool for informing stakeholders of pre-meditated decisions is not enough (Vento & Sjöblom, 2018). Our analysis indicates that putting collaborative governance into practice under surmounting pressure requires carefully designed processes, but more importantly a different skillset from civil servants who mediate collaboration. We can only make an educated guess that “transformative mediation” (Ansell & Gash, 2008, p. 547) is by large not a part of university curricula and must be therefore acquired through practice. We argue that these skills become the main factor that limit the possibility of collaboration as we have referred to in the title of our paper.

Second, clustering of organizations in Estonian forest policy network allows us to refine and emphasize the relationship between trust and learning. Trust is often referred to as a key factor in relation to the success of cooperative governance (Klijn et al., 2010). We would like to emphasize its importance in enabling policy learning. Dunlop and Radaelli (2013) have argued for the importance of “certification of actors” for policy learning. While this can refer to formal position of the actors involved, our analysis suggests the informal mechanisms of certification, that is, increasing reciprocal trust in actors through collaboration. Network analysis indicates that the policy makers deemed certain actors and claims as legitimate and others as not. Importantly, two major Estonian universities occupied places in different clusters. It is obvious that universities have high formal certification in the society and the question is in the way in which these sources of information were used. Collaboration process was not able to clear doubts that some scientific knowledge is unbalanced. Different data was used in the conflict to support one or another argument instead of using it for achieving higher order solutions. Thus, formal certification was challenged by lack of trust. Tracking trust levels between pairs of organizations and the clustering of trust should be a key predictor for success of collaboration.

Also, we encourage seeing the conflict that erupted in the policy field from a positive side as it opened the policy network up for new actors. The number of organizations involved in the next FDP now exceeds 30 and includes new participants, such as the Nature Tourism Union. Even the social movement EMA was, after a months-long debate, included in the ongoing process.

Finally, we draw attention to emerging literature of network methods for assessing decision-making networks (Cvitanovic et al., 2017). Our study adds to these methodological contributions by connecting them to network measurements that relate directly to theories of collaborative governance. Future studies should track the longitudinal developments of the network measurements and track the shifting topology over time.

7 | CONCLUSION

Our analysis suggests that although cumulative measurements or assessment of generalized trust in a collaborative process (Klijn et al., 2010; Leach & Sabatier, 2005) may be high, collaboration can nevertheless fail to achieve its goals. Growing demands for finite resources highlight the limits and possibilities of deliberative democracy. When inter-organizational trust is lacking, cooperation may be impossible because it renders trusting different knowledge sources difficult. Therefore, we suggest that relational trust should be closely monitored. It is possible that absolute consensus in forestry policy is indeed practically unachievable (Peterson et al., 2005), as scientific findings can be contradictory. But there is a fine line between haphazard collaboration and agonistic pluralism (Mouffe, 1999). Our analysis stresses the importance of clear and powerful institutions for common knowledge production that are able to sail the muddy waters of ecosystem governance. When collaborative governance is unable to adequately address tensions and conflicts in the network despite the well-crafted institutional design, mediated negotiations (Forester, 2006, 2009) or other forms of intermediaries (Kivimaa, Boon, et al., 2019; Kivimaa, Hyysalo, et al., 2019) may be suitable for articulating needs, aggregating knowledge and creating institutional support for collaborative governance. However, conflicts in the forest policy network should not necessarily be seen only from a negative point of view because this could drive policy network towards renewal and change.

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ENDNOTE

¹ Although Teder and Kaimre (2018) mention other arenas, such as advisory boards and round tables, these are not cross-sectoral. Media as a separate arena is not included in this analysis.

REFERENCES

- Ansell, C., & Gash, A. (2008). Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory*, 18(4), 543–571.
- Axelrod, R. (1984). *The evolution of cooperation*. Basic Books.
- Barroso-Méndez, M. J., Galera-Casquet, C., Seitanidi, M. M., & Valero-Amaro, V. (2016). Cross-sector social partnership success: A process perspective on the role of relational factors. *European Management Journal*, 34(6), 674–685. <https://doi.org/10.1016/j.emj.2016.07.004>
- Beland Lindahl, K., Sandström, C., & Sténs, A. (2017). Alternative pathways to sustainability? Comparing forest governance models. *Forest Policy and Economics*, 77, 69–78. <https://doi.org/10.1016/j.forpol.2016.10.008>
- Bertelsmann Stiftung. *Transformation Index*. Retrieved from <https://www.bti-project.org/en/reports/country-dashboard-EST.html>
- Birnbaum, S. (2016). Environmental co-governance, legitimacy, and the quest for compliance: When and why is stakeholder participation desirable? *Journal of Environmental Policy & Planning*, 18(3), 306–323. <https://doi.org/10.1080/1523908X.2015.1077440>
- Bodin, Ö. (2017). Collaborative environmental governance: Achieving collective action in social-ecological systems. *Science*, 357(6352), eaan1114. <https://doi.org/10.1126/science.aan1114>
- Brandes, U., Dellinger, D., Gaertler, M., Gorke, R., Hofer, M., Nikoloski, Z., & Wagner, D. (2008). On modularity clustering. *IEEE Transactions on Knowledge and Data Engineering*, 20(2), 172–188.
- Brinkmann, S. (2014). Unstructured and semi-structured interviewing. In P. Leavy (Ed.), *The Oxford handbook of qualitative research*. Oxford: Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780199811755.013.030>
- Butler, J. (2017). Participation, legitimacy, and the epistemic dimension of deliberative democracy. *Social Philosophy Today*, 33, 55–72.
- Carrington, P. J., Scott, J., & Wasserman, S. (Eds.). (2005). *Models and methods in social network analysis*. Cambridge University Press. Retrieved from www.cambridge.org/9780521600972
- Csardi, G., & Nepusz, T. (2006). The igraph software package for complex network research. *InterJournal*, 1695, 1–9.
- Cvitanovic, C., Cunningham, R., Dowd, A.-M., Howden, S. M., & van Putten, E. I. (2017). Using social network analysis to monitor and assess the effectiveness of knowledge brokers at connecting scientists and decision-makers: An Australian case study: Assessing the effectiveness of a knowledge broker. *Environmental Policy and Governance*, 27(3), 256–269. <https://doi.org/10.1002/eet.1752>
- Defries, R., & Nagendra, H. (2017). Ecosystem management as a wicked problem. *Science*, 356(6335), 265–270. <https://doi.org/10.1126/science.aal1950>
- Dunlop, C. A., & Radaelli, C. M. (2013). Systematising policy learning: From monolith to dimensions. *Political Studies*, 61(3), 599–619.
- Environmental Law Center. (2013). *Metsamajandamise piirangud. Õiguslik analüüs Metsaseaduses sätestatud piirangutest 1998–2013* [Restrictions on forest management. Analysis of forest management restrictions provided for in the Forest Act 1998–2013]. Tartu: Environmental Law Center. Retrieved from <https://docplayer.ee/147675706-Metsamajandamise-piirangud-%C3%B5iguslik-anal%C3%BC%C3%BCs-metsaseaduses-%C3%A4testatud-piirangutest-aastatel-sa-keskkonna%C3%B5iguse-keskus-2013.html>
- Estonian University of Life Sciences & University of Tartu. (2018). *Eesti metsanduse arengukava 2030 alusuuring* [Basic Research for Estonian Forestry Development Plan 2030]. Tartu: Estonian University of Life Sciences & University of Tartu. Retrieved from https://www.envir.ee/sites/default/files/mak2030_alusuuringu_aruanne.pdf
- Forester, J. (2006). Making participation work when interests conflict: Moving from facilitating dialogue and moderating debate to mediating negotiations. *Journal of the American Planning Association*, 72, 447–456. <https://doi.org/10.1080/01944360608976765>
- Forester, J. (2009). *Dealing with differences: Dramas of mediating public disputes*. Oxford University Press.
- Guest, G., Macqueen, K., & Namey, E. (2012). *Applied thematic analysis*. Sage publications. <https://doi.org/10.4135/9781483384436>
- Harvey, B., Cochrane, L., & Van Epp, M. (2019). Charting knowledge co-production pathways in climate and development. *Environmental Policy and Governance*, 29(2), 107–117. <https://doi.org/10.1002/eet.1834>
- Jackson, M. O. (2008). *Social and economic networks*. Princeton University Press.
- Kallas, A. (2002). Public forest policy making in post-Communist Estonia. *Forest Policy and Economics*, 4(4), 323–332. [https://doi.org/10.1016/S1389-9341\(02\)00074-6](https://doi.org/10.1016/S1389-9341(02)00074-6)
- Kickert, W. J. M., Klijn, E. H., & Koppenjan, J. F. M. (Eds.). (1997). *Managing complex networks*. Sage.
- Kivimaa, P., Boon, W., Hyysalo, S., & Klerkx, L. (2019). Towards a typology of intermediaries in sustainability transitions: A systematic review and a research agenda. *Research Policy*, 48(4), 1062–1075. <https://doi.org/10.1016/j.respol.2018.10.006>
- Kivimaa, P., Hyysalo, S., Boon, W., Klerkx, L., Martiskainen, M., & Schot, J. (2019). Passing the baton: How intermediaries advance sustainability



- transitions in different phases. *Environmental Innovation and Societal Transitions*, 31, 110–125. <https://doi.org/10.1016/j.eist.2019.01.001>
- Klijin, E.-H., Edelenbos, J., & Steijn, B. (2010). Trust in governance networks: Its impacts on outcomes. *Administration & Society*, 42(2), 193–221. <https://doi.org/10.1177/0095399710362716>
- Koontz, T. M., & Thomas, C. W. (2006). What do we know and need to know about the environmental outcomes of collaborative management? *Public Administration Review*, 66(s1), 111–121. <https://doi.org/10.1111/j.1540-6210.2006.00671.x>
- Koppenjan, J., Klijin, E.-H., & Klijin, E.-H. (2004). *Managing uncertainties in networks: Public private controversies*. Routledge. <https://doi.org/10.4324/9780203643457>
- Kuresoo, L. (2013, March 6) *Läbirääkija või soojapuhur?* [Negotiator or Heat Blower?] Postimees. Retrieved from <https://arvamus.postimees.ee/1160140/liis-kuresoo-labiraakija-voi-soojapuhur>
- Leach, W. D., & Sabatier, P. A. (2005). To trust an adversary: Integrating rational and psychological models of collaborative policymaking. *American Political Science Review*, 99(4), 491–503. <https://doi.org/10.1017/S000305540505183X>
- Lepa, R., Illing, E., Kasemets, A., Lepp, Ü., & Kallaste, E. (2004). *Kaasamine otsustetegemise protsessi* [Inclusion in the process of decision-making]. Tallinn: Poliitikauringute Keskus PRAXIS. Retrieved from <http://www.praxis.ee/wp-content/uploads/2014/03/2004-Kaasamine-otsustetegemise-protsessi.pdf>
- Lõhmus, A. (2017, September 7). *Mida on näidanud aasta metsapoleemikat* [What has a year of forest polemics shown us]. Sirp.
- Maier, C., Lindner, T., & Winkel, G. (2014). Stakeholders' perceptions of participation in forest policy: A case study from Baden-Württemberg. *Land Use Policy*, 39, 166–176.
- Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *The Academy of Management Review*, 20(3), 709. <https://doi.org/10.2307/258792>
- Moseley, C., & Winkel, G. (2014). Sustainable forest management on federal lands in the US Pacific Northwest – Making sense of science, conflict, and collaboration. In P. Katila, G. Galloway, W. de Jong, P. Pacheco, G. Mery, & R. Alfaro (Eds.), *Forests under pressure: Local responses to global issues*. IUFRO World Series 32 (pp. 189–204). International Union of Forest Research Organizations.
- Mouffe, C. (1999). Deliberative democracy or agonistic pluralism. *Social Research* Vol. 66(3), 745–758.
- Murphy, M., Perrot, F., & Rivera-Santos, M. (2012). New perspectives on learning and innovation in cross-sector collaborations. *Journal of Business Research*, 65(12), 1700–1709. <https://doi.org/10.1016/j.jbusres.2012.02.011>
- Nordberg, K., & Salmi, P. (2019). Addressing the gap between participatory ideals and the reality of environmental management: The case of the cormorant population in Finland. *Environmental Policy and Governance*, 29(4), 251–261. <https://doi.org/10.1002/eet.1850>
- Ostrom, E. (2005). *Understanding institutional diversity*. Princeton University Press.
- Ostrom, E., Gardner, R., & Walker, J. (1994). *Rules, games and common pool resources*. The University of Michigan Press.
- Paavola, J. (2007). Institutions and environmental governance: A reconceptualization. *Ecological Economics*, 63(1), 93–103. <https://doi.org/10.1016/j.ecolecon.2006.09.026>
- Pagliari, F., & Castelfranchi, C. (2014). Trust, relevance, and arguments. *Argument & Computation*, 5(2–3), 216–236. <https://doi.org/10.1080/19462166.2014.899270>
- Pedersen, T. L. (2018). ggraph: An Implementation of Grammar of Graphics for Graphs and Networks (R package version 1.0.2.) [Computer software]. Retrieved from <https://CRAN.R-project.org/package=ggraph>
- Peters, D. T. J. M., Klijin, E. H., Stronks, K., & Harting, J. (2017). Policy coordination and integration, trust, management and performance in public health-related policy networks: A survey. *International Review of Administrative Sciences*, 83(1), 200–222. <https://doi.org/10.1177/0020852315585061>
- Peterson, M. N., Peterson, M. J., & Peterson, T. R. (2005). Conservation and the myth of consensus. *Conservation Biology*, 19(3), 762–767. <https://doi.org/10.1111/j.1523-1739.2005.00518.x>
- Pöder, K. (2010). *Structural solutions to social traps: Formal and informal institutions* (Doctoral dissertation). TUT Press. Retrieved from <https://digikogu.taltech.ee/et/Item/13cc6b4a-560c-4959-b4f8-008e6c8d0b16>
- Raitio, K., & Harkki, S. (2014). The disappearing chain of responsibility: Legitimacy challenges in the political governance of Finnish Forest and Park Service. *Land Use Policy*, 39, 281–291. <https://doi.org/10.1016/j.landusepol.2014.02.008>
- Rikmann, E., Käger, M., Tatar, M., Pertsjonok, A., Vihma, P., Vallimäe, T., & Vainu, V. (2019). *Kodanikuühiskonna arengukava mõjude vahehindamine* [Mid-term evaluation of the effects of the Civil Society Development Plan]. Tallinn: Siseministeerium, Tallinna Ülikool, Balti Uuringute Instituut, Turu-Uuringute AS.
- Rodela, R., & Gerger Swartling, Å. (2019). Environmental governance in an increasingly complex world: Reflections on transdisciplinary collaborations for knowledge coproduction and learning. *Environmental Policy and Governance*, 29(2), 83–86. <https://doi.org/10.1002/eet.1842>
- Rowe, G., & Watermeyer, R. P. (2018). Dilemmas of public participation in science policy. *Policy Studies*, 39(2), 204–221.
- Saunders, M., Skinner, D., Dietz, G., Gillespie, N., & Lewicki, R. (2010). *Organizational trust: A cultural perspective*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511763106.017>
- Schaap, L. (2007). Closure and governance. In E. Sørensen & J. Torfing (Eds.), *Theories of democratic network governance* (pp. 111–132). Palgrave Macmillan.
- Scott, T. A., & Thomas, C. W. (2017). Unpacking the collaborative toolbox: Why and when do public managers choose collaborative governance strategies? *Policy Studies Journal*, 45(1), 191–214. <https://doi.org/10.1111/psj.12162>
- Sootla, G. (2004). Poliitika jätkusuutlikkuse mehhanismid. Teoreetilise raamistiku rakendus eesti metsapoliitika kujundamise analüüsil [Policy sustainability mechanisms. Application of the theoretical framework in the analysis of Estonian forest policy development]. *Acta Politica*, 1, 22.
- Sorensen, E., & Torfing, J. (Eds.). (2007). *Theories of democratic network governance*. Palgrave Macmillan.
- Sorensen, E., & Torfing, J. (2005). The democratic anchorage of governance networks. *Scandinavian Political Studies*, 28(3), 195–218. <http://dx.doi.org/10.1111/j.1467-9477.2005.00129.x>
- Sotirov, M., Blum, M., Storch, S., Selter, A., & Schraml, U. (2017). Do forest policy actors learn through forward-thinking? Conflict and cooperation relating to the past, present and futures of sustainable forest management in Germany. *Forest Policy and Economics*, 85, 256–268. <https://doi.org/10.1016/j.forpol.2016.11.011>
- State Forest Management Center. (2018). *Visitation monitoring*. Retrieved from https://media.rm.k.ee/files/RMK%20majandatavate%20puhke_%20ja%20kaitsealade%20k%C3%BClastatavus%20k%C3%BClastaja%20ja%20k%C3%BClastus.pdf
- State Forest Management Center. (2019). *Visitation arrangements in RMK*. Retrieved from <https://media.rm.k.ee/files/Planeermine%20k%C3%BClastuse%20m%C3%B5jud%20ja%20meetmed%20negatiivsete%20m%C3%B5jude%20ennetamiseks.pdf>
- Teder, M., & Kaimre, P. (2018). The participation of stakeholders in the policy processes and their satisfaction with results: A case of Estonian forestry policy. *Forest Policy and Economics*, 89, 54–62. <https://doi.org/10.1016/j.forpol.2017.05.007>
- Torfing, J., & Triantafillou, P. (Eds.). (2016). *Enhancing public innovation by transforming public governance*. Cambridge University Press. <https://doi.org/10.1017/CBO9781316105337>

- Tuomela, R., & Tuomela, M. (2005). Cooperation and trust in group context. *Mind & Society*, 4(1), 49–84. <https://doi.org/10.1007/s11299-005-0008-5>
- Turu-Uuringute AS, Ecology Center at University of Tallinn & Ministry of Environment. (2018). *Eesti elanike keskkonnateadlikkuse uuring* [Estonian Residents Environmental Awareness Study]. Retrieved from https://www.envir.ee/sites/default/files/2018_keskkonnateadlikkuse_uuring.pdf
- Tüür, T. (2019, June 20) *Kuus avalikku küsimust keskkonnaministeeriumile* [Six public questions to the Ministry of the Environment]. ERR. Retrieved from <https://www.err.ee/954013/tarmo-tuur-kuus-avalikku-kusimust-keskkonnaministeeriumile>
- Uus, M., Ender, J., Noor, K., Unt, R., & Vihma, P. (2011). *Mittetulunduslikud esindusorganisatsioonid kui võrdväärsed partnerid riiklike otsuste planeerimisel ja elluviimisel* [Non-profit representative organizations as equal partners in the planning and implementation of national decisions]. Tallinn: Praxis. Retrieved from <http://www.praxis.ee/tood/esindusorganisatsioonid-kui-vordvaarsed-partnerid-riiklike-otsuste-planeerimisel-ja-elluviimisel/>
- Väli, L-M. (2017, December 12). *Kuidas algas Metsasõda?* [How did the Forest War begin?]. Alkeemia. Retrieved from <http://alkeemia.delfi.ee/keskkond/planeetmaa/kuidas-algas-metsasoda?id=80464892>
- Vento, I., & Sjöblom, S. (2018). Administrative agencies and the collaborative game: An analysis of the influence of government agencies in collaborative policy implementation. *Scandinavian Political Studies*, 41(2), 144–166. <https://doi.org/10.1111/1467-9477.12114>
- Vilbaste, K. (2018, April 4). *Metsasõda või metsalise marutamine?* [Forest war or beast rage?]. Vaba Eesti Sõna. Retrieved from <http://www.vabaestisona.com/index.php/juhtkiri/8948-metsasoda-voi-metsalise-marutamine.html>
- Weible, C. M., Sabatier, P. A., & McQueen, K. (2009). Themes and variations: Taking stock of the advocacy coalition framework. *Policy Studies Journal*, 37(1), 121–140. <https://doi.org/10.1111/j.1541-0072.2008.00299.x>
- Winkel, G., & Sotirov, M. (2011). An obituary for national forest programmes? Analyzing and learning from the strategic use of “new modes of governance” in Germany and Bulgaria. *Forest Policy and Economics*, 13(2), 143–154. <https://doi.org/10.1016/j.forpol.2010.06.005>
- Yaffee, S. L., & Wondolleck, J. M. (2000). Making Collaboration Work: Lessons from a comprehensive assessment of over 200 wideranging cases of collaboration in environmental management. *Conservation in Practice*, 1(1), 17–24. <https://doi.org/10.1111/j.1526-4629.2000.tb00156.x>

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APPENDIX A

Organizations, listed by their average perceived influence on forest policy decisions; network centrality measurements for interaction and trust

networks: BC, betweenness centrality; DC, Degree centrality; membership in arenas: FC, Forestry Council; FDP, the temporary committees for the creation of Forestry Development Plans. Column “Q” indicates whether the organization filled in the questionnaire; column “I” indicates interviews.

Abbr.	Name	Avg. perceived influence on forest policy	Interaction network		Trust network		Membership in arenas			Q	I
			DC	BC	DC	BC	FC	FDP 1999	FDP 2009		
KeskM	Ministry of The Environment	4.8	113	270	103	251	Y	Y	Y	Y	Y
RK	Parliament' Environment Committee	3.7	45	7	36	4	Y	Y	Y		
RMK	State Forest Management Center	3.7	60	7	46	8	Y	Y	Y	Y	Y
EMPL	Woodworking Industry Development Cluster	3.6	32	0	22	0	Y	Y	Y	Y	Y
EramL	Estonian Private Forest Union	3.3	64	52	49	47	Y	Y	Y	Y	Y
RahM	Ministry of Finance	3.2	27	2	18	1				Y	
ELF	Estonian Fund for Nature	2.9	81	114	69	97		Y	Y	Y	Y
KeskAg	Environment Agency	2.8	61	25	66	26	Y			Y	Y
RiKa	Government Office	2.8	10	0	13	0				Y	Y
EMÜ	University of Life Sciences	2.7	60	14	52	7	Y		Y	Y	Y
KeskAm	Environmental Board	2.7	76	38	68	31				Y	Y
FSC	Forest Stewardship Council	2.6	67	110	66	114				Y	Y
EKO	Chamber of Environmental Associations	2.5	52	1	54	2	Y			Y	Y
TÜ	University of Tartu	2.4	76	56	78	62	Y			Y	Y
EramK	Private Forest Center	2.4	74	61	69	61	Y			Y	Y
MaaM	Ministry of Rural Affairs	2.4	37	48	41	7	Y	Y	Y	Y	Y
EMA	Estonian Forest Aid	2.4	73	30	84	49				Y	Y
EML	Forest Plant Producers Association	2.3	17	0	17	0	Y				
KÕK	Environmental Law Center	2.1	29	0	38	0				Y	
ÕkE	Ecostate Estonia	2	27	0	0	0				Y	Y
EOÜ	BirdLife Estonia	1.8	60	49	68	48				Y	
LS	Animal Protection Society	1.7	34	85	40	83				Y	
HTM	Ministry of Education and Research	1.6	11	0	12	0			Y	Y	
KulM	Ministry of Culture	1.6	4	0	3	0				Y	
LuuA	LuuA Forestry School	na	4	0	3	0					
PõmA	Agricultural Board	na	7	0	9	0					
KotK	Eagle Cub	na	41	8	47	5				Y	
MesiL	Professional Beekeepers Association	na	5	0	7	0				Y	Y
KOV	Association of Estonian Cities and Municipalities	na	3	0	2	0					