




Article

# Dispute Resolution and Collaborative Decision-Making: What Accounts for Their Effectiveness? The Case of Romania

Constantina Alina Hossu <sup>1,\*</sup>, Ioan Cristian Ioja <sup>1</sup>, Maria Pătroescu <sup>1</sup>, Adrian Dușa <sup>2</sup> and Anna M. Hersperger <sup>3</sup>

<sup>1</sup> Centre for Environmental Research and Impact Studies, University of Bucharest, 010041 Bucharest, Romania; cristian.ioja@geo.unibuc.ro (I.C.I.); mpatroescu@yahoo.com (M.P.)

<sup>2</sup> Department of Sociology, University of Bucharest, 050663 Bucharest, Romania; dusa.adrian@unibuc.ro

<sup>3</sup> Land Change Science, Swiss Federal Research Institute WSL, 8903 Birmensdorf, Switzerland; anna.hersperger@wsl.ch

\* Correspondence: alina.hossu@g.unibuc.ro

Received: 22 November 2019; Accepted: 5 December 2019; Published: 10 December 2019



**Abstract:** Collaborative dispute resolution is essential in natural resource management in the process of negotiating solutions to environmental issues. Our study aims to look at the factors which appear to contribute to the effectiveness of collaborative problem-solving efforts in case studies of environmental conflicts in Romania. The selected case studies illustrate conflicts over the management of natural resources, human-wildlife conflicts, as well as conflicts between development and conservation. A framework for collaborative governance and the multi-value qualitative comparative analysis (mvQCA) method are used to assess and compare 27 case studies in order to identify the factors that bring about success in the resolution of the conflicts in question. Our results indicate that a combination of different characteristics of shared motivation and joint action is sufficient for reaching agreement on the contested issues. However, most of the agreements are not stable due to political and administrative reasons. This study discusses the opportunities and constraints under which collaborative efforts unfold in the case studies. It could also help managers to enhance collaboration in the resolution process for environmental conflicts in the future.

**Keywords:** mvQCA; environmental conflicts; shared motivation; joint action; Romania

## 1. Introduction

Natural resources are common pool resources, and their management is a problem of collective action [1]. Furthermore, their availability is limited, which can contribute to management problems and conflicts [2]. More and more emphasis is placed on co-management to increase equity, improve the protection of natural resources, reduce conflicts, and achieve more inclusive decisions [3]. For example, the planning field has dramatically changed in recent decades towards a more collaborative approach [4–6], focused on actors' engagement, in order to improve the efficiency of the planning and conflict resolution process [7,8].

Collaboration has become a vital prerequisite for success in natural resource management disputes [9–11], as it facilitates sustainable environmental outcomes [3,12]. Collaboration can also improve personal relationships between parties, smooth the way for conflict resolution, and increase the quality of solutions, so that they are more likely to be implemented [13,14]. Furthermore, the emergence of environmental NGOs all over the world, as well as the establishment of public-private partnerships of various kinds, has led to the search for more effective forms of collaborative problem-solving to support the resolution of environmental disputes [9].

However, there are also barriers to effective collaboration. People tend to stereotype others who have different interests. This, in turn, may threaten their ability to find common ground [9]. Relationships among stakeholders can be further jeopardized by political power imbalances, which may result in impeding their direct interaction. When collaboration is voluntary, the most powerful actors could decide not to participate, since they believe they can probably achieve their desired outcomes in any case (or so they think). Although collaboration promotes the interests of minority stakeholders, it tends to level power relations when the group operates by consensus [15]. When collaboration operates on an ad hoc basis, it often fails to clarify the ground rules, roles, and benefits for participants or other protocols and opportunities for shared learning [16]. Collaborative processes may be demanding in terms of time [17] and their effectiveness might only appear over time, when “on-the-ground” results from negotiation and cooperation are achieved and adaptive responses are experienced [18].

Even as the push for collaborative conflict resolution spreads, with many hundreds of published case studies available that illustrate collaborative efforts in resolving environmental conflicts [9,14,17,19], it remains unclear what accounts for the success or failure of collaborative efforts [20].

In previous studies, we explored what contributes to the successful resolution of land use conflicts and what prevents stakeholders from participating in local decision-making [21,22]. We concluded that the best uses of land are more likely to be achieved when parties work together. Furthermore, in a recent study [23], we looked at the drivers likely to initiate collaboration in case studies of environmental conflicts using the first dimension of Emerson et al.’s [24] theoretical framework for collaborative governance (specifically the drivers of collaboration, Figure 1). This study constitutes a continuation of this work, aiming to explore the second dimension of the aforementioned theoretical framework (specifically, the dynamics of collaboration that determine its effectiveness, Figure 1). Specifically, Romanian case studies of environmental conflicts are analyzed (Table 1) in order to determine the factors behind the effectiveness of collaboration in environment-related disputes.

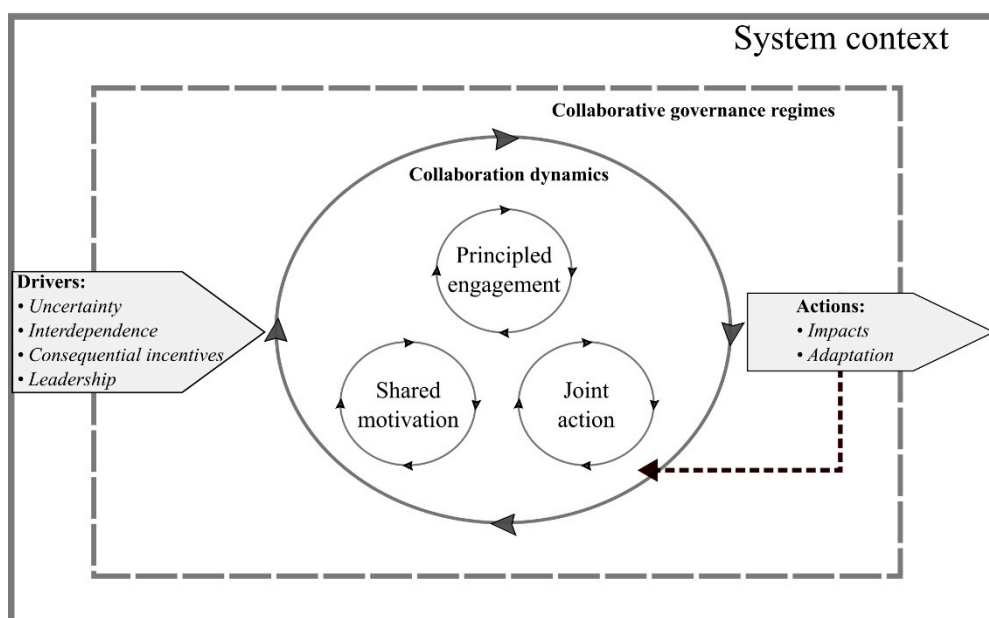


Figure 1. The framework for collaborative governance, source: [24].

**Table 1.** Characteristics of the selected cases.

Cases *	Conflict Type	Location
Case 1		Vrancea, Covasna, and Harghita Counties
Case 2		Oltul Superior and Raul Negru Natura 2000 sites, Covasna and Brasov Counties
Case 3	Human–wildlife conflicts	Iron Gates Natural Park, Caras Severin and Mehedinti Counties
Case 4		Feldioara Municipality, Brasov County
Case 5		Harghita County
Case 6		Putna-Vrancea Natural Park, Vrancea County
Case 7	Forest exploitation-related conflicts	Semenic-Cheile Carasului Natural Park, Caras-Severin county
Case 8		
Case 9		Gradistea-Caldarusani-Dridu Natura 2000 site, Ilfov County
Case 10	Transportation-related conflicts	Fegernic Meadow, Bihor County
Case 11		Pitesti-Sibiu highway, Sibiu, Valcea, and Arges Counties
Case 12	Human pressures on protected areas	Lower Siret Meadow and the overlapping protected areas, Braila, Galati, and Vrancea Counties
Case 13		Iron Gates Natural Park, Caras Severin and Mehedinti Counties
Case 14	Investments in protected areas	Defileul Jiului National Park, Gorj County
Case 15		Fagaras Mountains, Sibiu County
Case 16		Hațeg Country Dinosaurs Geopark, Hunedoara County
Case 17	Human interventions in protected areas	Nerei Valley, Caras-Severin County
Case 18		Ceahlau National Park, Neamt County
Case 19		Iron Gates Natural Park, Caras Severin and Mehedinti Counties
Case 20	Built-up zones in protected areas	Putna-Vrancea Natural Park, Vrancea County
Case 21		
Case 22		Iron Gates Natural Park, Caras Severin and Mehedinti Counties
Case 23	Mining-industry related conflicts	City of Moldova Noua, Caras-Severin County
Case 24		Lower Siret Meadow Natura 2000 site, Braila, Galati, and Vrancea Counties
Case 25		Piatra Craiului National Park, Arges and Brasov Counties
Case 26	Human pressures in protected areas	Danube Delta Biosphere Reservation, Tulcea, Constanta, and Galati Counties
Case 27		Lake Petea Natura 2000 site, Bihor County

\* See Table S1 for summary descriptions of the cases.

According to Emerson et al.'s [24] framework for collaborative governance (Figure 1), the effectiveness of collaborative activities depends largely on the interaction between principled engagement, shared motivation, and joint action.

The framework has been built, based on literature from different domains (i.e., planning, conflict management, and environmental governance) and empirical studies (i.e., [13,25–29]). It is thus suited to

an empirical evaluation of case studies. Furthermore, it enables comparative analyses of collaborative efforts in the resolution of environmental conflicts and is especially useful for testing theories based on the propositions that the authors derive from it [24]. Emerson et al. (2012) describe causal pathways linking the elements in the framework and advocate for more research in order to establish how these elements relate to each other. Therefore, we considered the three elements of collaboration dynamics (Figure 1) as factors and used mvQCA to perform a systematic analysis of the influence of these factors on the quality and the extent of collaboration in cases of environmental conflicts in Romania.

Each of the three factors essential for effective collaboration (principled engagement, shared motivation, and joint action) consists of four concepts.

*Principled engagement* refers to the ability of the involved actors to identify relevant information about the contested issues. It consists of discovery (parties engage in joint fact-finding activities and analytic investigations), definition (parties define common goals regarding the problem at hand), deliberation (parties have a fair and civil dialogue during deliberations), and determinations (a common strategy is reached) [24].

*Shared motivation* consists of mutual trust (parties work together to build trust), mutual understanding (differences of opinion were identified and respected), legitimacy (parties have compatible interests), and commitment (parties are motivated to achieve outcomes together by constantly participating in collaborative meetings) [24].

*Joint action* consists of procedural and institutional arrangements (rules and internal protocols are established to ensure the efficiency of the collaboration process), leadership (leadership roles are filled, i.e., mediator, sponsor, and technical expert), knowledge (joint and comprehensible knowledge is produced), and resources (parties contribute with resources to effectively manage the collaborative process) [24]. These concepts provide the basis for defining the rules for setting the calibration scores (Table 2).

## 2. Method

### 2.1. Selection of Cases

Romania's environmental policy has considerably changed in the past 30 years. Its environmental problems are characteristic of former communist countries going through a transition process towards a free market economy. The overuse of natural resources, high rates of urbanization, and chemical use in agriculture have contributed to widespread environmental degradation [30–32]. After Romania's accession to the European Union (EU) in 2007, the environmental problems started to receive attention, especially due to the country's duty to harmonize its legislation with EU environmental legislation, as well as due to the notable empowerment of NGOs, which increasingly engage in the protection of the environment and civil society.

Although collaborative resource management is practiced in Romania [23,33,34], many barriers undermine its success. Most of them refer to the planning process that involves a predominantly top-down and overly technical model, without many opportunities for collaboration. The bureaucratic system as well as planners' unfamiliarity with collaborative processes also hinder such practices. Moreover, traditions and power relationships shape collaborative initiatives in Romania.

Twenty-seven case studies of environmental conflicts in Romania (Table S1) were selected for close analysis. We chose the case study approach as it allowed us to apply elements of Emerson et al.'s [24] theoretical framework for collaborative governance and thus observe phenomena, supporting the analysis of real-life situations [35,36]. We selected case studies where the parties were engaged in collaborative efforts towards finding a solution to an environmental conflict. We only included cases that were rather recent (only after 2007, with Case 9 being the oldest) as we were primarily concerned with understanding today's collaborative problem-solving efforts in Romania and cases for which adequate information was available.

The topics of the selected case studies include natural resource management conflicts, human–wildlife conflicts, as well as conflicts between development and conservation. They are typical of what appears in the scientific literature from across Europe as well as other parts of the world when studying environmental conflicts (i.e., [9,19,37–39]).

Information was collected from published studies, projects reports, records of meetings, and notes.

## 2.2. Multi-Value Qualitative Comparative Analysis (mvQCA)

Qualitative comparative analysis was employed in order to assess causal relationships between a set of conditions and an outcome [40,41]. Therefore, we transferred the three factors of Emerson et al.'s [24] framework (principled engagement, shared motivation, and joint action) into “conditions” and used mvQCA to explore the combinations of factors contributing to the effectiveness of collaboration, which represents the “outcome” of interest in QCA terminology.

mvQCA is suitable to our study, compared to other variants of QCA, given the nature of our calibrated conditions, which display multiple values for each causal condition. Additionally, our study deals with rich information extracted from case study analysis involving nominal and ordinal data [23]. Other variants, specifically fuzzy-set QCA (fsQCA), require quantitative (continuous) data, while crisp-set QCA (csQCA) is a simplified version of mvQCA, allowing only dichotomous conditions, where a score of 1 accounts for a case having full membership within a given condition, and a score of 0 accounts for a case having full non-membership. In mvQCA, each case can have multiple-graded memberships, and the data may therefore consist of discrete integers, starting from a score of 0 and continuing with consecutive scores (i.e., 1, 2, 3, etc.) [42]. Generally, a low number of values for the causal conditions is preferable in mvQCA, as the number of logical reminders (those configurations that are logically possible but do not display any empirical cases) increases with the number of coding scores assigned to each condition running into the problem of limited diversity [42].

The conditions and the outcomes are considered as sets, given that QCA is rooted in set theory, where the relations between sets are expressed using Boolean logical operations, such as “AND” (“\*”, the intersection of sets) and “OR” (“+” the union of sets) [43]. Conditions (or configurations of conditions) that are necessary are those that must be present for the outcome to occur, while conditions that are sufficient are those that can guarantee the occurrence of the outcome when they are present [41,42]. In addition to necessary and sufficient conditions, QCA also identifies INUS conditions, which are insufficient but necessary parts of a condition, which is itself unnecessary but sufficient for the result [44].

Constructing the input data matrix involves calibrating the data. Calibration refers to assigning set membership scores to the raw data (see Section 2.3). Another important step in the QCA is the construction of the truth table, which lists all the logically possible configurations (including those without empirical instances), showing which cases cover which configurations [45]. With three factors for the effectiveness of collaboration, each scored in three categories, there are 27 logically possible configurations [42]. Each logically possible configuration is assessed as to whether or not it is sufficient for the outcome, and 18 truth table rows remain as logical reminders in line with the theoretical knowledge (Table S2). Nine truth table rows correspond to empirically observed case studies. The minimization of the truth table using Boolean algebra aims at finding the simplest possible expression associated with the outcome of interest [42]. This is an important step in detecting minimally sufficient configurations of conditions and producing results, called “solutions” according to QCA terminology. Three such solutions are produced: the conservative solution (which includes only the configurations for which empirical evidence exists), the parsimonious solution (additionally including the logical remainders), and the intermediate solution (which uses only those logical remainders that are in line with established theoretical knowledge). We chose to report the intermediate solution as it is superior in finding both causally relevant and sufficient conditions [42].

In QCA, the “goodness of fit” concerning the necessity and sufficiency of the set-theoretic relations can be measured by consistency and coverage measures [41]. Consistency measures the degree to

which the cases sharing a condition (or combination of conditions) agree in displaying the outcome of interest. Therefore, a high consistency results in a strong set relationship. Coverage measures the degree to which a condition (or combination of conditions) “accounts for instances of an outcome” [46]. The higher the coverage, the more relevant the condition (or combination of conditions).

For this analysis, we used the QCA package (v.3.4) [42] in R (v.3.4.0) and RStudio (v.1.0.143) [47].

### 2.3. Calibration of Cases

Membership scores were assigned to the three factors (principled engagement, shared motivation, and joint action) and the outcome (effectiveness of collaboration) for each case based on the evaluation of the selected 27 case studies of environmental conflicts. Discrete integers (i.e., 0, 1, and 2) were used to categorize the three factors and the outcome in the three groups (Table 2).

**Table 2.** Rules for setting the calibration scores.

Factors	Scores		
<b>Principled Engagement (PE)</b>	<b>2</b> A membership of 2 is assigned when parties engaged in joint fact-finding activities and analytical investigations try to define common goals by having a fair and civil dialogue during deliberations. These lead to a common strategy for accomplishing the collective purpose.	<b>1</b> A membership of 1 is assigned when, although parties are engaged in joint fact-finding activities and analytical investigations, they cannot find any common ground during deliberations to produce a common strategy for accomplishing the collective purpose.	<b>0</b> A case is calibrated as 0 when parties fail to engage in effective collaboration to produce a common strategy for accomplishing the collective purpose.
	<b>2</b> A membership of 2 is assigned when parties work together to build trust, identify and respect differences of opinion to achieve compatible interests, and are motivated to achieve outcomes together by constantly participating in collaborative meetings.	<b>1</b> A membership of 1 is assigned when, although parties work together to find out each other’s opinions and are interested in achieving outcomes together, their trust is gradually destabilized, leading to poor outcomes.	<b>0</b> A case is calibrated as 0 when parties try to work together, because it represents a formal step in the planning process, and are interested to achieve personal gains.
	<b>2</b> A membership of 2 is assigned when rules and internal protocols are established to ensure the efficiency of the collaboration process, leadership roles are filled, joint and comprehensible knowledge is produced, and parties contribute with resources to effectively manage the collaborative process.	<b>1</b> A membership of 1 is assigned when rules, guiding protocols, and resources exist for the management of the collaboration process. However, the available knowledge is difficult for some parties to understand.	<b>0</b> A case is calibrated as 0 when the collaborative process lacks guiding protocols as well as joint and comprehensible knowledge, even though resources (i.e., financial, administrative) exist.
<b>Outcome</b>	<b>Scores</b>		
<b>Collaboration Effectiveness</b>	<b>2</b> A case is calibrated as 2 when the agreement resulting from collaborative actions is fully implemented and the conflict is ended.	<b>1</b> A membership score of 1 is assigned when the agreement resulting from collaborative actions is fully implemented, but there is a high risk of the conflict erupting again in the future due to political and administrative reasons.	<b>0</b> A case is calibrated as 0 when the agreement resulting from collaborative actions is partly implemented and a fragile or no agreement can be reached.

Emerson et al.’s [24] theory was used to specify directional expectations. The authors suggest that the interactions of principled engagement, shared motivation, and joint action influence the quality and extent of collaboration. Therefore, in the case studies, we considered that, where principled

engagement, shared motivation, and joint action each have a membership of 2, collaboration is more likely to be effective.

We understood collaboration as being effective when the outcome received a score of 2 or 1 (Table 2). Although a membership score of 1 indicates the potential for the conflict to erupt again in the future, we regarded the collaboration as effective because it paved the way to an agreement by enabling the parties to work together, leaving them open to future negotiation and collaboration in the case of other potential conflicts.

### 3. Results

#### *Necessary and Sufficient Factors Leading to Effective Collaboration*

The necessity scores helped us to detect whether or not the necessary factors for effective collaboration exist. No category of each factor alone was necessary for the effectiveness of collaboration because of consistency scores that were too low. When we looked for combinations of factors, we found three trilateral combinations as necessary, emerging with satisfactory consistency scores and good coverage in terms of explaining the effectiveness of collaboration. The three combinations of factors likely to lead to effective collaboration can be read as follows:

(i) PE{1}+SM{1}+JA{2} (consistency: 0.731; coverage: 0.792): PE{1} parties engaged in joint fact-finding activities to explore the issues at hand without producing, in the end, a common strategy for solving the conflict; OR SM{1} parties worked together to find out and understand each other's opinions in an atmosphere of poor trust; OR JA{2} institutional arrangements, joint knowledge, and resources were added to help in the search for an agreement that would likely end the conflict.

(ii) PE{1}+SM{2}+JA{1} (consistency: 0.731; coverage: 0.792): PE{1} parties engaged in joint fact-finding activities to explore the issues at hand without producing, in the end, a common strategy for solving the conflict; OR SM{2} parties worked together to find out and understand each other opinions—they were motivated to achieve outcomes together and trusted each other enough; OR JA{1} institutional resources and resources to manage the collaborative process existed, but the available knowledge could not lead to improved comprehension of the contested issues, although a solution to end the conflict was likely to emerge.

(iii) PE{2}+SM{0}+JA{1} (consistency: 0.731; coverage: 0.760): PE{2} parties engaged in joint fact-finding activities to explore the issues at hand and produced, in the end, a common strategy for solving the conflict; OR SM{0} parties engaged in collaborative activities because this represented a formal step in the planning process and were interested in securing personal gains; OR JA{1} institutional resources and resources to manage the collaborative process existed, but the available knowledge could not lead to improved comprehension of the contested issues, although a solution to end the conflict was likely to emerge.

When testing for sufficiency, three solutions were produced: conservative, parsimonious, and intermediate. We chose to interpret the intermediate solution, as it allowed us to filter out the counterfactuals that were not in line with the theory of Emerson et al. [24], which we used to specify directional expectations.

The intermediate solution reveals in which combinations the analyzed factors are sufficient for effective collaboration. This solution formula has the highest consistency value (i.e., 1) and explains 14 out of the 27 cases (Table 3).

In the first two parts of the intermediate solution (SM{2}+JA{2}), parties' shared motivation and joint action were high in four cases. The collaboration process was considered useful, even if it was impossible to satisfy some parties' needs (to be specific, the granting of environmental permits for nose-horned viper farms) (Case 3). Trust was founded on parties' commitment to achieve a compromise. Finding a solution to end the conflict was mandatory because the two highway sectors that had to be linked by a viaduct had already been built (Case 10). The leadership role played by a mediator was crucial in producing a final agreement (Case 18). Furthermore, the understanding of each other's

perspectives and the recognition and acceptance that errors had been made when delimitating a sustainable development area in a natural park favored reaching an agreement (Case 20). In all four cases, the final agreement was implemented and the conflicts ended: in Case 3, the nose-horned viper farms were banned; in Case 10, the viaduct was built; in Case 18, changing the limits of the sustainable development area to include a ski track was unanimously approved; in Case 20, the limits of the sustainable development area of the natural park were modified to allow for the built-up extension to be institutionalized through the general urban plan and the management plan of the natural park.

**Table 3.** Intermediate solution for effective collaboration.

Intermediate Solution			
Solution	SM{2}+JA{2}+SM{1}*JA{1} => collaboration effectiveness{1,2}		
Consistency	1		
Raw Coverage	0.538		
Cases Covered	14		
Parts of the Intermediate Solution			
	SM{2}	JA{2}	SM{1}*JA{1}
Consistency	1	1	1
Raw Coverage	0.038	0.038	0.385
Cases Covered	3 (Cases 3, 10, and 20)	3 (Cases 18, 10, and 20)	10 (Cases 2, 4, 6, 11, 17, 23, 1, 5, 7, and 12)

\* X{Y} where X is a factor from the data set and Y is a set of scores of X; \* AND, + OR, => solution is sufficient

The third part of the intermediate solution SM{1}\*JA{1} has the widest representativeness of case studies and is the most relevant for explaining the effectiveness of collaboration according to the coverage scores. The factor shared motivation was realized by attending meetings organized according to a standard agenda in order to keep the disputants from raising their voices (Cases 2 and 4), and participating in meetings where disputants were asked to explain their concerns and plans (Case 23). In all the explained case studies, trust was scarce but parties were committed to the collaboration process. For example, some parties did not trust others regarding the data they presented on the number of bears or the extent of the damage they caused (Case 5) or the monitoring results of bark beetle attacks, which were considered to have been overestimated (Case 7). In Case 11, the trust between the participants at the collaborative meetings was very low. These participants mostly represented environmental NGOs interested in stopping the construction of a section of the highway, rather than finding solutions to support wildlife management. This made communication with state road representatives difficult. Parties' engagement in joint action proved useful in the pursuit of an effective collaborative process. State and private actors/agencies pushed the process and supported it with resources (technical and financial) in all cases, which explains this part of the solution. This brought the relevant stakeholders to the table. In Cases 4 and 17, resources were secured by the environmental impact assessment (EIA) procedure. In Case 6, funds came from the Sectoral Operational Programme for Environment, funded by EU funds, in partnership with the Romanian government. In the explained cases, scientific and technical knowledge was introduced at meetings via expert presentations and educational programs (Cases 2, 4, and 11), but materials for building knowledge were too technical and difficult to understand (Cases 7 and 12). Final agreements were reached; however, many barriers to their implementation exist: i.e., the brown bear conservation methods are not mandatory and only recommended (Case 1); unlicensed culling practices for beavers continue (Case 2); the hunting of a specific number of bears was permitted in areas where they cause the most damage, but the human–bear conflict has also not ended (Case 5); the request to remove wind-damaged trees attacked by bark beetles was approved, although concerns exist that a larger amount of wood will be exploited than that which was agreed upon (Case 7); the management plan did not resolve certain issues, which could further provoke conflicts (Case 12); the decision to stop the construction of small hydropower plants (SHPs) has not been institutionalized (Case 17);



implementation of the measures to stabilize the tailing dumps against wind erosion is hampered by financial, administrative, and real estate constraints (Case 23).

#### 4. Discussion and Conclusions

The solution found as sufficient for the effectiveness of collaboration, i.e., the interplay between different scores of shared motivation and joint action, or a high level of shared motivation or a high level of joint action alone, explains 14 case studies in which collaboration was effective. The two factors are interconnected, since shared motivation generates joint action which in turn strengthens it [24]. In none of the cases was the final agreement reached easily, while the effectiveness of the agreements that were reached seemed to depend on how the interactions between the parties and their joint actions were handled.

The 14 case studies explained by the solution are good examples of how collaborative dispute resolution can be effective: an increased understanding of the underlying interests of all stakeholders makes it highly likely for parties to reach agreements. The fact that these cases experienced effective collaboration might be due to legal procedures (i.e., environmental impacts assessment) and financial incentives (i.e., EU funds), as found in other studies [23,48].

Since Romania's accession in 2007, EU environmental policies that favor collaboration between parties, such as the Public Participation Directive, the Birds and Habitat Directives, and the Environmental Assessment Directives regulating environmental impact assessments and strategic environmental assessments were transposed into national legislation. In some of the explained case studies, a joint EIA helped to raise awareness of everyone's interests. For example, there was a highly incomplete understanding of the impacts that an American mink farm (Case 4), a highway viaduct (Case 10), a highway section (Case 11), and SHP projects (Case 17) might have and almost no sense of how the affected actors were thinking about the contested issues.

It appears that EU funds can play an important role in facilitating effective collaboration in Romania. They promote collaboration by encouraging parties to look for collaborators to solve critical environmental issues [23], but also encourage parties to interact in the form of joint activities to reach a consensus about a contested issue [49]. For example, in Case 10, the parties were motivated to reach an agreement to prevent the European Commission from withdrawing the funds due to non-compliance on environmental grounds.

In some of the explained discussed cases, a professional and neutral mediator (Cases 18 and 23) or a dedicated independent leader (i.e., in Cases 1, 12, and 17) was critical in easing the dialogue between participants, facilitating the discovery of mutual concerns [50,51]. However, the lack of any neutral parties to manage negotiations in most of the above-mentioned case studies results from the limited popularity of mediation practices in Romania. Parties are often reluctant because they fear that the mediated agreement is not binding [52]. Although the role of a neutral party is institutionalized through mediation law (Law 192 from 2006) in the country, very few environment-related disputes are mediated [53], with many settled in court.

There was distrust between parties in most cases explained by the solution. However, legitimacy and commitment to the collaborative process existed, which resulted in an agreement being reached. This finding contrasts with the claim made by Emerson et al. [24], who state that trust and mutual understanding generate legitimacy and commitment. Our results indicate that, when trust breaks down, it seems that legitimacy and commitment can be used to reinforce collaborative dynamics. It would be interesting to test this finding in future research by individually examining the elements of shared motivation for a selection of case studies of environmental disputes.

Even where good practice concerning collaborative conflict resolution emerged, the agreement was not always durable. For example, the lack of governmental agencies committed to the implementation of a collaborative approach raises questions about the legitimacy of collaborative efforts. In Case 1, the Ministry of the Environment did not make the collaboratively proposed methods for brown bear conservation mandatory; it only recommended them. This jeopardized the implementation, as

many hunters and farmers preferred not to implement them on the basis that they were voluntary. Furthermore, environmental institutions lack the capacity to implement the agreements (i.e., Case 12). The capacity of Romania's environmental institutions is generally limited due to understaffing and inexperience, combined with financial constraints, as well as a lack of maturity in resources protection, which has resulted in corruption and subsequently hampered collaborative efforts [31,54].

In cases where at least one of the three factors had a score of "0", it is highly unlikely that the parties reached meaningful agreements. Such cases could not be explained by the solution as they were not in line with the directional expectations we set, based on Emerson et al.'s [24] framework. Furthermore, none of the categories of principled engagement emerged out of the sufficient configuration for effective collaboration. This demonstrates that engagement activities and joint actions are still uncommon in Romania. Other countries such as U.S., Australia, Denmark, or Finland have developed good practices for collaborative activities where joint activities provide a comfortable forum for joint problem-solving [9,55–57]. These could be good examples for Romania where the insufficient collaboration tradition [33], planners' and other government officials' unfamiliarity with collaborative processes, and the legal duty of all parties to engage in collaborative problem-solving, even if they are not committed to doing so (and their lack of trust in the process), has often threatened to undermine the overall effectiveness of the collaborative process. Furthermore, biased attitudes and skepticism towards collaboration still shape collaborative initiatives in Romania [21,22,58].

We included in our study different types of environmental conflicts. We conclude that the factors sufficient for effective collaboration seem to be the same in different resource management contexts.

Our analysis of Romania's environmental conflict experiences describes both successful and problematic aspects of collaborative approaches to environmental conflict resolution. The results suggest means that are most likely to be effective in countries that are new to the idea of collaborative conflict resolution. For example, in Case 18, the role of a neutral professional was crucial in encouraging the parties to find a solution. In Case 12, joint knowledge was produced so that the participants could develop a better understanding of the environmental as well as socioeconomic conditions needed to create a management plan. Such learning, in general, supports more productive dialogue [59] and increases the chances of effective collaboration [60].

Using mvQCA, in conjunction with the framework for collaborative governance adapted from Emerson et al. [24], has proven useful because it reveals important combinations of factors that explain why collaboration is likely to be effective. The method can be easily applied in other study areas worldwide.

**Supplementary Materials:** The following are available online at <http://www.mdpi.com/2071-1050/11/24/7072/s1>, Table S1: Short description of the case studies and the calibration of the outcome, Table S2: Truth table for the analysis of the combinations of factors sufficient for effective collaboration.

**Author Contributions:** C.A.H., I.C.I. and A.M.H. conceived and designed the study; C.A.H. and A.D. analyzed the data; C.A.H. wrote the first draft of the paper; I.C.I., A.M.H., A.D. and M.P. offered guidance, support and feedback for improving the paper.

**Funding:** This research was funded by the Romanian National Authority for Scientific Research UEFISCDI grant number PN-III-P1-1.1-PD-2016-0248.

**Acknowledgments:** The authors are grateful to the anonymous reviewers for their constructive comments that helped to improve the quality of the manuscript.

**Conflicts of Interest:** The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

## References

1. Adams, W.M.; Brockington, D.; Dyson, J.; Vira, B. Managing tragedies: Understanding conflict over common pool resources. *Science* **2003**, *302*, 1915–1916. [[CrossRef](#)] [[PubMed](#)]
2. Kok, A.; Lotze, W.; Van Jaarsveld, S. *Natural Resources, the Environment and Conflict*; ACCORD: Durban, South Africa, 2009.

3. Armitage, D.R.; Plummer, R.; Berkes, F.; Arthur, R.I.; Charles, A.T.; Davidson-Hunt, I.J.; Diduck, A.P.; Doubleday, N.C.; Johnson, D.S.; Marschke, M.; et al. Adaptive co-management for social–ecological complexity. *Front. Ecol. Environ.* **2009**, *7*, 95–102. [[CrossRef](#)]
4. Healey, P. Collaborative planning in perspective. *Plan. Theory* **2003**, *2*, 101–123. [[CrossRef](#)]
5. Khakee, A. Evaluation and planning: Inseparable concepts. *Town Plan. Rev.* **1998**, *69*, 359–374. [[CrossRef](#)]
6. Forrester, J. *Planning in the Face of Power*; University of California Press: Berkeley, CA, USA, 1989.
7. Albrechts, L. Strategic (Spatial) planning reexamined. *Environ. Plan. B Plan. Des.* **2004**, *31*, 743–758. [[CrossRef](#)]
8. Albrechts, L. Ingredients for a more radical strategic spatial planning. *Environ. Plan. B Plan. Des.* **2015**, *42*, 510–525. [[CrossRef](#)]
9. Wondolleck, J.M.; Yaffee, S.L. *Making Collaboration Work: Lessons from Innovation in Natural Resource Management*; Island Press: Washington, DC, USA, 2000; ISBN 9781597262002.
10. Berkes, F. Evolution of co-management: Role of knowledge generation, bridging organizations and social learning. *J. Environ. Manag.* **2009**, *90*, 1692–1702. [[CrossRef](#)]
11. Redpath, S.M.; Gutiérrez, R.J.; Wood, K.A.; Young, J.C. *Conflicts in Conservation: Navigating Towards Solutions*; Cambridge University Press: Cambridge, UK, 2015.
12. Pahl-Wostl, C. A conceptual framework for analysing adaptive capacity and multi-level learning processes in resource governance regimes. *Glob. Environ. Chang.* **2009**, *19*, 354–365. [[CrossRef](#)]
13. Bentrup, G. Evaluation of a collaborative model: A case study analysis of watershed planning in the intermountain west. *Environ. Manag.* **2001**, *27*, 739–748. [[CrossRef](#)]
14. Sabatier, P.A.; Focht, W.; Lubell, M.; Trachtenberg, Z.; Vedlitz, A.; Matlock, M. *Swimming Upstream. Collaborative Approaches to Watershed Management*; The MIT Press: Cambridge, MA, USA; London, UK, 2005.
15. Susskind, L.; McKearman, S.; Thomas-Larmer, J. *The Consensus Building Handbook: A Comprehensive Guide to Reaching Agreement*; Sage Publications: Thousand Oaks, CA, USA, 1999; ISBN 9780761908449.
16. Susskind, L.; Camacho, A.E.; Schenk, T. A critical assessment of collaborative adaptive management in practice. *J. Appl. Ecol.* **2012**, *49*, 47–51. [[CrossRef](#)]
17. Susskind, L.; Cruikshank, J.L. *Breaking the Impasse: Consensual Approaches to Resolving Public Disputes*; Basic Books: New York, NY, USA, 1987; ISBN 0465007503.
18. Emerson, K.; Nabatchi, T. Evaluating the productivity of collaborative governance regimes: A performance matrix. *Public Perform. Manag. Rev.* **2015**, *38*, 717–747. [[CrossRef](#)]
19. Layzer, J.A. *The Environmental Case: Translating Values Into Policy*, 3rd ed.; CQ Press: Washington, DC, USA, 2011; ISBN 1604266120.
20. Gutiérrez, R.J.; Wood, K.A.; Redpath, S.M.; Young, J.C. Conservation conflicts: Future research challenges. In *Current Trends in Wildlife Research*; Mateo, R., Arroyo, B., Garcia, J.T., Eds.; Springer: Berlin/Heidelberg, Germany, 2016.
21. Tudor, C.A.; Iojă, I.C.; Rozyłowicz, L.; Pătru-Stupariu, I.; Hersperger, A.M. Similarities and differences in the assessment of land-use associations by local people and experts. *Land Use Policy* **2015**, *49*, 341–351. [[CrossRef](#)]
22. Tudor, C.A.; Iojă, I.C.; Pătru-Stupariu, I.; Nită, M.R.; Hersperger, A.M. How successful is the resolution of land-use conflicts? A comparison of cases from switzerland and romania. *Appl. Geogr.* **2014**, *47*, 125–136. [[CrossRef](#)]
23. Hossu, C.A.; Ioja, I.C.; Susskind, L.E.; Badiu, D.L.; Hersperger, A.M. Factors driving collaboration in natural resource conflict management: Evidence from romania. *Ambio* **2018**, *47*, 816–830. [[CrossRef](#)]
24. Emerson, K.; Nabatchi, T.; Balogh, S. An integrative framework for collaborative governance. *J. Public Adm. Res. Theory* **2012**, *22*, 1–29. [[CrossRef](#)]
25. Bryson, J.M.; Crosby, B.C.; Stone, M.M. The Design and implementation of cross-sector collaborations: Propositions from the literature. *Public Adm. Rev.* **2006**, *66*, 44–55. [[CrossRef](#)]
26. Daniels, S.E.; Walker, G.B. *Working Through Environmental Conflict: The Collaborative Approach*; Praeger: Westport, CT, USA, 2001.
27. Leach, W.D. Collaborative public management and democracy: Evidence from western watershed partnerships. *Public Adm. Rev.* **2006**, *66*, 100–110. [[CrossRef](#)]
28. Ansell, C.; Gash, A. Collaborative governance in theory and practice. *J. Public Adm. Res. Theory* **2007**, *18*, 543–571. [[CrossRef](#)]

29. Potschin, M.; Kretsch, C.; Haines-Young, R.; Furman, E.; Berry, P.; Baró, F. Nature-based Solutions. In *OpenNESS Ecosystem Services Reference Book*; Potschin, M., Jax, K., Eds.; Openness Project: Helsinki, Finland, 2016; EC FP7 Grant Agreement no. 308428.
30. Grădinaru, S.R.; Iojă, C.I.; Onose, D.A.; Gavrilidis, A.A.; Pătru-Stupariu, I.; Kienast, F.; Hersperger, A.M. Land Abandonment as a precursor of built-up development at the sprawling periphery of former socialist cities. *Ecol. Indic.* **2015**, *57*, 305–313. [[CrossRef](#)]
31. Ioja, C.I.; Patroescu, M.; Rozyłowicz, L.; Popescu, V.D.; Verghelet, M.; Zotta, M.I.; Felciuc, M. The efficacy of Romania's protected areas network in conserving biodiversity. *Biol. Conserv.* **2010**, *143*, 2468–2476. [[CrossRef](#)]
32. Petrescu-Mag, R.M.; Banatean-Dunea, I.; Vesa, S.C.; Copacinschi, S.; Petrescu, D.C. What do Romanian farmers think about the effects of pesticides? Perceptions and willingness to pay for bio-pesticides. *Sustainability* **2019**, *11*, 3628. [[CrossRef](#)]
33. Nita, A.; Rozyłowicz, L.; Manolache, S.; Ciocănea, C.M.; Miu, I.V.; Popescu, V.D. Collaboration networks in applied conservation projects across Europe. *PLoS ONE* **2016**, *11*, e0164503. [[CrossRef](#)]
34. Hersperger, A.M.; Ioja, I.C.; Steiner, F.; Tudor, C.A. Comprehensive Consideration of conflicts in the land-use planning process: A conceptual contribution. *Carpath. J. Earth Environ. Sci.* **2015**, *10*, 5–13.
35. McKeown, T. Case Studies and the Limits of the Quantitative Worldview. In *Rethinking Social Inquiry*; Brady, H., Collier, D., Eds.; Rowman and Littlefield: Lanham, MD, USA, 2004.
36. George, A.; Bennett, A. *Case Studies and Theory Development in the Social Sciences*; MIT Press: Cambridge, MA, USA, 2015.
37. Karamanlidis, A.A.; Sanopoulos, A.; Georgiadis, L.; Zedrosse, A. Structural and economic aspects of human–bear conflicts in Greece. *Ursus* **2011**, *22*, 141–151. [[CrossRef](#)]
38. Grodzinska-Jurczak, M.; Cent, J. Expansion of nature conservation areas: Problems with natura 2000 implementation in Poland? *Environ. Manag.* **2011**, *47*, 11–27. [[CrossRef](#)]
39. Hess, C.E.E.; Fenrich, E. Socio-environmental conflicts on hydropower: The São Luiz do Tapajós project in Brazil. *Environ. Sci. Policy* **2017**, *73*, 20–28. [[CrossRef](#)]
40. Ragin, C.C. *The Comparative Method: Moving Beyond Qualitative and Quantitative Strategies*; University of California Press: Berkeley, CA, USA, 1987.
41. Schneider, C.; Wagemann, C. *Set-Theoretic Methods for the Social Sciences: A Guide to Qualitative Comparative Analysis*; Cambridge University Press: Cambridge, MA, USA, 2012.
42. Duşa, A. *QCA with R: A comprehensive resource*; Springer International Publishing: New York, NY, USA, 2019; ISBN 9783319756684.
43. Ragin, C.C.; Rihoux, B. Qualitative comparative analysis (QCA): State of the art and prospect. *Qual. Methods* **2004**, *2*, 3–13.
44. Mackie, J.L. Causes and conditions. *Am. Philos. Q.* **1965**, *2*, 245–264.
45. Pagliarin, S.; Hersperger, A.M.; Rihoux, B. Implementation pathways of large-scale urban development projects (Isudps) in western Europe: A qualitative comparative analysis (QCA). *Eur. Plan. Stud.* **2019**, 1–22. [[CrossRef](#)]
46. Ragin, C.C. Set relations in social research: Evaluating their consistency and coverage. *Political Anal.* **2006**, *14*, 291–310. [[CrossRef](#)]
47. R Development Core Team. *R: A Language and Environment for Statistical Computing*; R Core Team: Vienna, Austria, 2008.
48. Saarikoski, H. Environmental Impact Assessment (EIA) as collaborative learning process. *Environ. Impact Assess. Rev.* **2000**, *20*, 681–700. [[CrossRef](#)]
49. Eckerberg, K.; Bjärstig, T.; Zachrisson, A. Incentives for collaborative governance: Top-down and bottom-up initiatives in the Swedish Mountain Region. *Mt. Res. Dev.* **2015**, *35*, 289–298. [[CrossRef](#)]
50. Rinkus, M.A.; Dobson, T.; Gore, M.L.; Dreelin, E.A. Collaboration as process: A case study of Michigan's watershed permit. *Water Policy* **2015**, *18*, 182–196. [[CrossRef](#)]
51. Susskind, L.; Cruikshank, J.L. *Breaking Robert's Rules: The New Way to Run Your Meeting, Build Consensus, and Get Results*; Oxford University Press: Oxford, UK, 2006; ISBN 9780195308365.
52. Floca, I. Practical Aspects of Mediation. In Proceedings of the Challenges of the Knowledge Society, Bucharest, Romania, 15–16 April 2011.
53. Chereji, C.R.; Pop, A.G. Community mediation. A model for Romania. *Transylvanian Rev. Adm. Sci.* **2014**, *10*, 56–74.

54. Rozyłowicz, L.; Nita, A.; Manolache, S.; Ciocanea, C.M.; Popescu, V.D. Recipe For Success: A network perspective of partnership in nature conservation. *J. Nat. Conserv.* **2017**, *38*, 21–29. [[CrossRef](#)]
55. Susskind, L. Citizen Participation and Consensus Building in Land Use Planning. A Case Study. In *The Land Use Policy Debate in the United States*; de Neufville, J.I., Ed.; Plenum Press: New York, NY, USA, 1981.
56. Margerum, R.D. *Beyond Consensus: Improving Collaborative Planning And Management*; MIT Press: Cambridge, MA, USA, 2011.
57. Oliveira, E.; Hersperger, A.M. Governance Arrangements, funding mechanisms and power configurations in current practices of strategic spatial plan implementation. *Land Use Policy* **2018**, *76*, 623–633. [[CrossRef](#)]
58. Petrisor, A.I. The theory and practice of urban and spatial planning in Romania: Education, laws, actors, procedures, documents, plans, and spatial organization. A multiscale analysis. *Serb. Archit. J.* **2010**, *2*, 139–154.
59. Fuller, B.W. Surprising cooperation despite apparently irreconcilable differences: Agricultural water use efficiency and CALFED. *Environ. Sci. Policy* **2009**, *12*, 663–673. [[CrossRef](#)]
60. Cinque, S. Collaborative management in wolf licensed hunting: The dilemmas of public managers in moving collaboration forward. *Wildlife Biol.* **2015**, *21*, 157–164. [[CrossRef](#)]



© 2019 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).