Multilevel Coordination and Cooperation during Implementing Supranational Environmental Legislation: A Case Study on Invasive Alien Species

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Abstract: Coordination and cooperation are necessary topics to strengthen international environmental agreements that improve action against worldwide challenges towards sustainable development and environmental protection, such as invasive alien species (IAS). This study aims to assess to what extent national and transnational cooperation and coordination influences the implementation of a supranational regulation against IAS based on an example from the European Union (EU). Data is used from a broader study, including 47 responses to an online questionnaire and 22 interviews completed by experts from two countries (Austria and Romania), together with in depth literature. Additionally, the IAS-Regulation is analyzed from the perspective of cooperation and coordination. The terms "cooperation" and "coordination" were found within the text of the IAS-Regulation 11 and nine times respectively, whereas their context was transnational and national levels mainly, and transnational, respectively. It was further acknowledged from the majority of the answers from the survey respondents that the national coordination and cooperation is weaker than the transnational level due to the influence of the national competence distribution. Results from the interviews are separated into 'transnational' and 'national' cooperation and coordination. They show that the majority of the 47 responses indicate that the distribution of competence is one of the main influencing factors on the implementation. It is concluded that the current situation of cooperation and coordination in Austria and Romania renders it difficult for the European Commission to receive a realistic view about IAS and the implementation of the IAS Regulation in the two countries; hence, it is difficult to offer helpful support especially due to poor national cooperation. The current study can serve as a blueprint for further studies. Even in regional integration contexts beyond the EU, it can prove helpful to assess the impact of different kinds of competence distribution on the implementation of common norms. Thus, this research can path the way innovatively and serve as a comparative example for similar future studies.

Keywords: sustainability; regulation against invasive alien species; Austria; Romania; cooperation; coordination; environmental protection

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1. Introduction

Global challenges and immanent transboundary environmental problems need mutual policies of cooperation and coordination around the globe [1,2]. In general, cooperation is a voluntary collective effort of involved stakeholders, working together to achieve common objectives. Coordination is an intentional, formal action in the pursuit of a common purpose [3]. Coordination and cooperation mutually depend upon each other [4]. There is no coordination without cooperation, as cooperation can become difficult without any coordination [1,5].

Coordination and cooperation are vital topics to apply in a time where international environmental agreements become a more powerful legislative and administrative tool [1,6,7]. They help to improve action worldwide towards sustainable development, to address threats such as Invasive Alien Species (IAS) [8–10]. The spread of IAS poses complex challenges that threaten both the biodiversity of the earth and the well-being of its citizens [11–14]. The problem is global, but the impacts on society, economic life, health, and natural heritage are distributed unevenly across nations and regions [15–18].

Preventing the international movement of IAS and coordinating a timely and effective response to invasions will require cooperation and collaboration among governments, economic sectors, non-governmental organizations (NGOs), and international treaty organizations [15,17,19]. These arrangements provide a foundation for coordination and cooperation among the numerous institutions and stakeholders involved for effective implementation [2,20,21]. The institutional arrangements within the government determine how global and supranational conventions and legislation are implemented at a national level [13]. A recent Regulation of the European Union (EU) against IAS sets rules against intentionally and unintentionally introduced IAS species and addresses particular species included into an IAS list of Union Concern [11,19]. The implementation of this Regulation No. 1143/2014 of the European Parliament and of the Council of 22 October 2014 on the prevention and management of the introduction and spread of invasive alien species (in short IAS Regulation) addresses some of the goals of sustainable development through norms on cooperation and coordination [2–4,9,22–25].

The IAS Regulation, especially in Art. 22 of the IAS Regulation [25], enacts coordination and cooperation between the European Commission (EC) and EU Member States (MS), between and within MS and with third countries. Therefore, the two main forms of cooperation and coordination in this study will be: the 'transnational' and the 'national' cooperation and coordination with detailed examples from experts of the two countries. How often and in what context do the terms 'cooperation' and 'coordination' occur in the IAS Regulation will be shortly discussed further in this study's findings.

The mandatory IAS list of Union Concern, as well as the facultative national and regional IAS lists mentioned as tools in the IAS Regulation, can increase the effectiveness of the needed cooperation, it can enhance the exchange of information and raise awareness on IAS, making the implementation successful [25,26].

By entering into force of the IAS Regulation, it becomes a part of the national legislation and is directly effective. From a normative perspective, Art. 22 of the IAS Regulation is backed by Art. 4 (3) of the Treaty on the European Union (TEU), which obliges the MS to "the principle of sincere cooperation," where cooperation and coordination are not elective. Nevertheless, this mandatory cooperation is a matter of national and subnational coordination and depends on each of the MS' freedom of "national identities, inherited in their fundamental structures, political and constitutional, inclusive of regional and self-government" [7,27,28]. This is where the influence of the MS' competence distribution plays a major role as well as the regional and voluntary cooperation [11]. This explains why this study does not start from the implied premise of the Art. 4 of the TEU, but intends to gain a pragmatic perspective of those involved in implementing the IAS Regulation.

For the IAS Regulation to be effective, cooperation and coordination at different levels and between different stakeholders are crucial [2]. The IAS Regulation can be a helpful legislative tool for a sustainable future, protecting biodiversity and human health, and avoiding economic damages [11] (p. 17) and [25,29]. For this supranational legislation to be feasible, cooperation and coordination between nations and/or stakeholders is a goal to encourage nations to comply rather than deviate, and to expand the practical usage of these agreements.

Hence, for such supranational legislation to be successfully implemented at a national level, specific and complex cooperation and coordination between supranational, national and subnational competences and/or other stakeholders are necessary [30–32].

In general, problems in cooperation occur when, in lack of a contract, parties fail to create joint benefits. Yet, in a joint project, cooperation provides net benefits compared to mutual deviation.

Problems regarding coordination can be typically solved without any sanctions (communication between parties is enough). Two equilibriums can appear: either 'both nations comply' or 'neither do'. Coordination is important because mutual compliance provides higher benefits for both nations than mutual deviation. Naturally, payoffs are higher when deviation is avoided. Coordination in agreements needs sanctions, as insurance, for all involved parties. Another problem in coordination is changing payoffs, which over time can convince nations to deviate due to their national interest. More important than making nations comply is the question of which party must comply (therefore bear the cost) and which can be the 'free-rider'. Yet, nations must learn that once a standard is established (e.g., by an environmental agreement) no party gains through deviation [6].

The main goal of this study is to highlight the importance of national and transnational cooperation and coordination within the implementation of a mandatory supranational environmental regulation. It therefore assesses to what extent cooperation and coordination influence implementation [33] in the case of the EU IAS Regulation, within the two EU-Member States, Austria and Romania, between these two countries and/or other EU Member States and/or third countries. The next chapter first describes the data sources for this article and, secondly, the findings are presented and discussed with a focus on the cooperation and coordination towards implementing the supranational IAS Regulation. The findings are structured by those gained with the help of the survey and those from the in-depth interviews. The latter are organized into transnational and national cooperation and coordination. Quotes help to keep track of the discussed ideas and to strengthen the findings. Finally, conclusions are drawn based on the previous findings and discussion.

2. Materials and Methods

This paper derives as part of much wider research, with a focus on the influence of different nature conservation power divisions in Austria (in short AT) and Romania (RO) on the implementation of the supranational IAS Regulation.

The exact methodology of the questionnaires and the interviews used here for the empirical data have already been described in detail in a previous publication [34] (pp. 261–263), and in the main case study itself by [11] (pp. 39–44). In this article we only highlight the important steps of the methodology used in this analysis.

Empirical data on different aspects of the implementation of the IAS Regulation in AT and RO were gathered between May and November 2015 [11,34] through surveys and additional interviews from Austrian and Romanian experts involved and/or possibly involved with the implementation of this Regulation.

The three reasons why these two countries were selected are: their geopolitical location (AT—central location in the EU, surrounded by MS, except for Switzerland and RO—a border region for the EU to MS, non-EU countries, the Black Sea and to Minor Asia); their different national organizational systems (federally vs. centrally organized states); and the possibility of the first authors' bilingual skills to gather the data in the mother tongue of the respondents (German and Romanian), so that the essential meaning of the answers would not get lost in the translation process. These three reasons are important for the data processing and for the discussion of the results.

For the data collection, potential Austrian respondents were personally known or found through internet research. In Romania, institutions, such as the Prefecture of Timiș County, the County Environmental Protection Agency (AJPM) and relevant selection from two contact lists (Romanian nature protection non-governmental organizations and custodians of the natural protected areas) from the 2015 website of the Ministry of Environmental, Waters, and Forests were used as a start. Subsequently, both in Austria and Romania, snowball sampling [35] obtained the majority of respondents.

After the respondents were contacted, firstly, the survey was put online in the form of a link. Secondly, these same respondents were asked if they would also participate in an additional interview in person or via telephone. The survey contained a mix of single choice, multiple choice and scale questions, adapted to each of the two countries' organizational systems. For some of these questions,

respondents could add also an additional answer. The semi-structured interview had the same questions for both Austrian and Romanian respondents (for numbers see Table 1).

Table 1. Numbers of stakeholders interviewed and having completed the questionnaire and their status as public organization or non-governmental organization (NGO) (for details see [11,34,36]).

Country	Total (*n*)	Surveys (*ns*)	Interviews (*no*)	Status as Organization or NGO		
				National (N)	Subnational (SN)	NGO
AT	16	16	8	8	6	2
RO	32	31 *	14 *	18 **	8 *	7 **
Total	48	47	22	26	14	9

* one Romanian respondent from subnational level gave the interview, but did not complete the survey and is not in the survey analysis. ** for Romania, one respondent chose both National and NGO in the survey, this counts once at national level.

To keep the identity of the respondents anonymous, codes were given to each Austrian and Romanian respondent, depending on their country and on the option of completing only the survey or both the survey and the interview (see Table A1 [11,37]).

For the survey, descriptive quantitative analysis was done, using counts and percentages for the responses, because the samples were relatively small and different (Austrian sample *n* = 16 and Romanian sample of *n* = 31, for details see Table 1).

Qualitative data analysis was a mix of the step model of inductive category development, deductive category application and of thematic text analysis [11,34,37]. Interview quotes were also used for an enhanced credibility of the empirical data [11,34,36].

For this study, only the survey and the interview questions related to cooperation and coordination were used.

2.1. Questions from the Survey for both Austrian and Romanian Respondents

The survey questions were the following [11]:

(1) 12.a: Should Austria/Romania, in your opinion, participate in a list of IAS of regional importance?
(2) 13.a: Should Austria/Romania, in your opinion, participate in a list of IAS of national importance?
(3) 15: With people from which of the following states will you cooperate and coordinate within the framework of the IAS Regulation?

2.2. Questions from the Interview for both Austrian and Romanian Respondents

The three interview questions summarized in question 9 were the following [11]:

(1) 9: Do you think you will cooperate with other EU states and/or third states regarding the implementation of the Regulation?
(2) If yes, with whom and how?
(3) How would the inner state cooperation work?

Hence, the findings from these questions were organized in two main categories: 'transnational' and 'national' cooperation and coordination.

3. Findings

The term "cooperation" appears in the IAS Regulation 11 times and the term 'coordination' nine times (for details see Table A2).

This aspect is important because it clearly shows the context in which cooperation and coordination was used in the IAS Regulation and the type at transnational and/or national levels (Table A2):

(1) For both the transnational and national level, the context is mainly transnational (because of specified regional cooperation and coordination), but also national because the decisions must be

ideally decided first at national and subnational levels (e.g., about which species are taken into the Union list or which measures should be taken).

(2) For the transnational type only, regarding cooperation, on the one hand there is not necessarily the need for an official agreement, and the lists (Union, national and regional lists) play a very important role; on the other hand, the coordination in the transnational context relies on the IAS Regulation on other existing agreements and clear action plans.

(3) For the national type only, the context of cooperation and coordination is among all involved competent authorities (national competence distribution).

Mandatory (the List of Union concern) and facultative (national and regional) lists mentioned in the IAS Regulation support the complex implications of cooperation and coordination within the success of the implementation of this supranational regulation. National lists with IAS of MS concern or lists with native species are means of prevention, unlike mandatory lists, such as the list of Union concern. Yet, with the help of such additional regional and national lists, MS can improve national coordination and cooperation. The lists can be reasonable and permissible only with working cooperation of all involved competences from AT and RO [8] (p. 35).

From the survey data, over 50% of the respondents from both countries are in favor of national and regional lists (counted answers of 'yes' and 'rather yes') (Figure 1a–d).
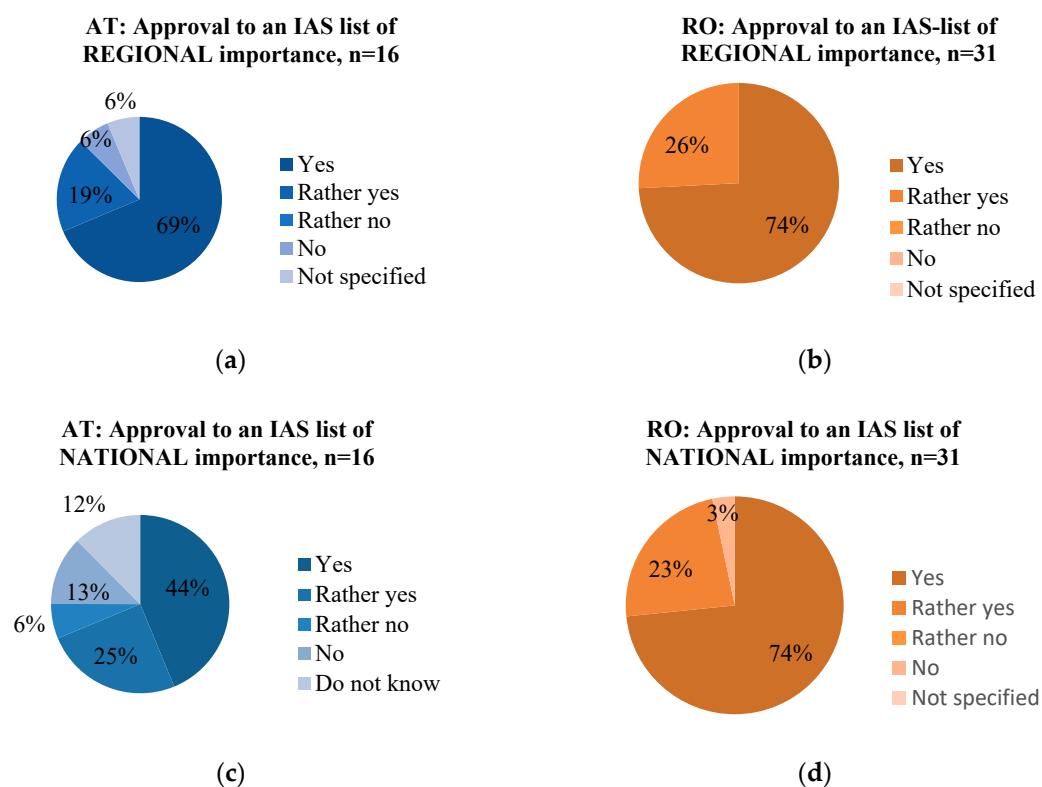
Figure 1. *Cont*.
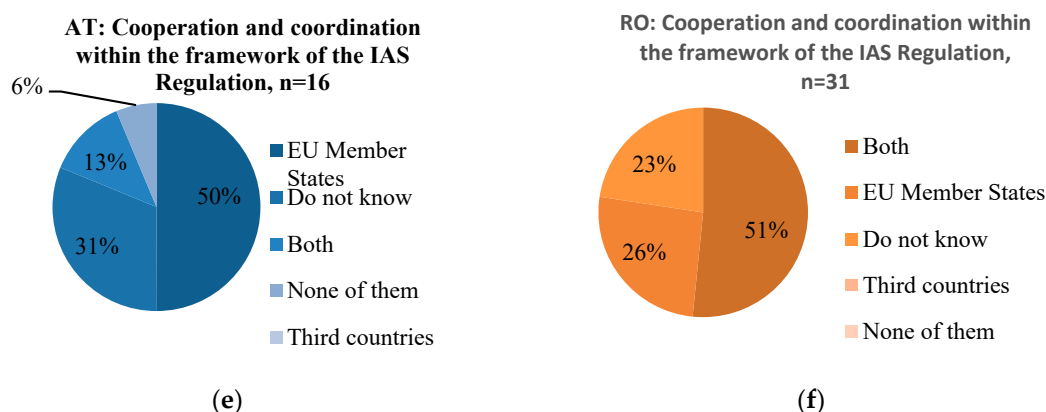
Figure 1. Answers from the Austrian and Romanian respondents for the survey questions 12a, 13a and 15: (**a**,**b**) Opinions of Austrian/Romanian survey respondents for a regional list; (**c**,**d**) opinions of Austrian/Romanian survey respondents for a national list; (**e**,**f**) opinions on the cooperation and coordination of Austrian/Romanian survey respondents [6].

In AT, 50% of the respondents will cooperate and coordinate with EU-MS within the Regulation, 31% do not know if they will become involved in such cooperation (Figure 1e), 13% will cooperate with both EU- and non-EU-countries and one respondent will not be in any cooperation (A2). Most cooperation takes place at a federal state level, mostly with EU-MS, occasionally with non-EU-countries.

In RO, cooperation with the IAS Regulation will take place with both EU-MS and non-EU-countries according to 51% of the Romanian respondents. A total of 26% will cooperate only with EU-MS and 23% do not know (Figure 1f).

To achieve feasible results in real life, the MS must exceed challenges of economics [18,31] and of competence distribution [11].

The interview question was divided in two parts; two kinds of cooperation and coordination, namely transnational and national [11] (pp. 69–74).

3.1. Transnational Cooperation and Coordination

Transnational cooperation takes place at meetings, organized discussions, in Brussels, at conferences, or scientific meetings. They help to assess:

(1) Strategic aspects
(2) Prevention aspects
(3) Customs aspects
(4) Clearing up ambiguities regarding the implementation
(5) Exchange information based on current experiences of scientists or other specialists
(6) Develop common risk assessments with neighboring countries (e.g., AT with Germany)
(7) Common scientific projects on IAS: identification, monitoring, speed of spreading, exact location of invasion, caused damages.

Most of the Austrian and Romanian interviewees believe in the international cooperation and coordination of their country with other countries, mostly MS and neighboring countries. The comparison between how each country approaches this implementation reveals strong and weak points in each of the two studied countries.

Six out of eight Austrian experts from the national level stated that AT will possibly cooperate on a transnational level with most the European countries, such as Switzerland, Norway, Iceland, Mediterranean countries, neighboring countries, but especially with Germany (DE). Within this cooperation, meetings and discussions take place in Brussels or at conferences on different issues of the list implementation. These events help to assess certain strategic aspects, prevention aspects,

customs administration and to clear up other ambiguities regarding the implementation. Scientific meetings are also considered "cooperation" where MS exchange information based on their current experience (AA, AB, AE) as well as the close cooperation with DE on the development of common risk assessment systems for DE and AT, where species are classified in relation to their impact from a nature conservation point of view (AC, AD). A working group in Brussels, under the Biodiversity Coordination Group, encourages MS to work with each other and to cooperate on this matter (AF).

> "[. . .] cooperation is used to exchange information about the distribution channels and how the regulation is implemented in Germany. For them it is a little bit easier, because of the nature conservation federal framework law, where they integrate this Regulation, which is not the case for Austria. In Brussels, there is also a working group under the Biodiversity Coordination Group, which aims for the Member States to work together, to report to each other, discuss campaigns, and exchange experiences and work information in this regard." (AF)

Two out of eight Austrian interviewees from the subnational level do not think that AT will cooperate on a transnational level and mentioned just neighboring countries, namely Hungary and Slovenia.

Nine out of 14 Romanian interviewees think that RO will interact on a transnational level regarding the implementation of the Regulation with the Danube countries, the Carpathian countries, but also with other EU-MS and neighboring states. Hungary, Bulgaria, and Germany were often mentioned regarding cooperation, but also the Czech Republic, France, Italy, and Spain. This kind of cooperation implies scientific research operations on IAS: identification, monitoring, speed of spreading, their location, and on the caused damages. Some IAS are vectors of transmissible diseases and need special attention from specialists (RD, RE, RH).

Collaborations and common projects on IAS already exist. The EU funds such projects which take place between institutions from different EU countries and will continue to do so in the future (RG, RN). Sharing knowledge within the scientific community is possible through conferences on related subjects, especially on good practices, which can establish national strategies, and through discussions between administrations of national parks (RF, RL, RM).

Three out of 14 Romanian interviewees think that such transnational cooperation is desired and needed but is not requested at a subnational or local level. This is not positive, as local matters often remain unknown at higher levels, especially at the European level. Another reason for the lack of transnational cooperation is the still unpopular status of the IAS topic and the IAS Regulation in RO. Therefore, progress is slow, which can signify the need for an extended implementation time.

The last two out of the 14 Romanian respondents mentioned that they do not know if RO will cooperate at a transnational level on the implementation and they noted that at subnational level it is usually highly dependent on the higher-level leadership, as these limit the attributions at lower levels.

3.2. National Cooperation and Coordination

At the national level, four Austrian interviewees out of eight said that they will cooperate within the national competences.

This is exemplified by the following statement:

> "[. . .] no effective cooperation can be promised and only the report of the Federal Ministry of Agriculture, Forestry, Environment, and Water Management is considered at the EU Commission. [. . .] At the Ministry side, we are not yet the formal legal coordinator. The Regulation also affects us as a federal authority, but as a Federal Ministry of Agriculture, Forestry, Environment, and Water Management we are not the central lead legal authority in the application of the Regulation at national level. To our understanding, this Regulation would be of federal province concern because it is part of nature conservation, which inflicts nature conservation competences from the federal provinces. They see it however differently." (AF)

National cooperation and coordination in AT are highly complex between the federal state and the federal provinces. Thus, a national platform exists to involve and invite all stakeholders to meetings,

offer information, and reports what is discussed and decided in Brussels. It also provides a service for the voting process. With the help of this platform, all opinions, (also for the Union list proposals) are gathered and taken 1:1 to Brussels.

In this way the Environmental Ministry coordinates this cooperation between the two levels of competence by organizing meetings where all federal provinces and affected stakeholders are invited; however, the federal provinces must organize themselves for these meetings. The federal state level must firstly regulate and process all parts of the implementation to intensify the cooperation with the other affected parties.

For example, an interviewee expressed the lack of the distribution of responsibilities among authorities in the following way:

> "The Regulation says that no matter who does the controls (veterinary, phytosanitary service, or customs) if something is found, it must be forwarded to the competent authority which must treat it according to the national legislation. […] Competent authorities need more support because experience show that cases of doubt occur quite often. In this case, experts are very useful to clarify questions, whether a species is invasive or not, if it falls under the ban or not, etc." (AE)

Cooperation between the Austrian Botanical Gardens and other organizations, such as the Austrian Horticultural Society, the federal provinces, and the Environmental Ministry on preventive measures are mentioned in the interviews.

Four out of eight Austrian interviewees say that they will not become involved in the national cooperation and did not go further into this subject.

> "There is a need of coordination within the different ministries and the cooperation with the federal provinces, which are responsible of combating, controlling, monitoring […]. In other cases, we often worked together with the provinces, but it is very complex because everything needs to be done nine times. For a functional cooperation, their responsibilities must be treated with care and the right language must be used, so that the two competences can be on the same page." (AC)

Similar arguments exist from those who would become involved in a national cooperation, but in a more negative light. The skepticism of the interviewees is based on the hampered coordination of the different ministries.

These results indicate the high complexity of the different ministries and that a better coordination between ministries and the nine federal provinces is needed.

Regarding reports and implementation, the following statement is representative for all the respondents:

> "Nature protection in Austria is a matter of federal provinces. […] a competent, coordinative, responsible person is in a nature conservation department, but often does not take an official operation function. […] it is just self-organization of the federal provinces. For reporting, implementing, or similar issues, a national report or a national correspondent is necessary. The EU does not speak with each of the nine provinces but communicates on a national level. In Austria, the BMLFUW has taken over the coordinating role, but the interactions between the federal provinces and the Ministry will be similar to the reports and implementation of "Natura 2000". Personally, I do not want to deal much with national cooperation." (AD)

It can be assumed that national cooperation and cooperation regarding reports and implementation will most likely be of similar complexity as "Natura 2000".

Subsequently, answers of other respondents lead to the conclusion that most aspects of the general implementation are still debated, and that implementation depends on practice (AG, AH). Consequences of this situation were expressed by one respondent in the following way:

"In principle, the typical major problems appear because of the federal provinces and the federal state powers. Oftentimes federal provinces are misinformed, but we fight all together for improvement." (AG)

Five out of 14 Romanian interviewees state that they will become involved with the national cooperation regarding the implementation of this Regulation.

"Unfortunately, the law regarding protected areas in Romania are less connected to nature and more administrative issues, construction approvals, cutting off forests, hydropower constructions and so on. Biodiversity does not really matter." (RD)

Hence, in general there appears to be a poor national cooperation and coordination. Little cooperation exists between environmental organizations, institutions within the same Ministries, between scientists within projects, and with schools.

Regarding cooperation between stakeholders, the following statements are typical:

"[. . .] on an inter-ministerial level or agencies, as the Romanian Water Agency (AAR-Agenția Apelor Române), the communication is not very effective." (RH)

"Perhaps there will be a change, after we will know more. I would be willing to start projects, but usually institutional orders come top down: they tell us what to do and we execute." (RI)

This leads to the conclusion that cooperation between authorities is poor, especially at inter-ministerial levels or agencies. This is an opinion valid for RO, as the top down hierarchy is more typical to a centrally organized state, where orders go from the national level to all subnational levels.

Seven interviewees out of 14 will not become involved in a national cooperation and mentioned the existing problems. One respondent expressed this as quoted:

"Currently IAS is not considered a priority issue because agencies that should know about it, do not. For example, the Agency for Payments and Intervention for Agriculture (APIA Agenția de Plăți și Intervenție pentru Agricultură) or those who deal with concrete processing applications for subsidies are unaware of this issue." (RL)

Some other interviewees believe that current national cooperation and coordination is very weak and that there is no collaboration or strategy at all. Several reasons are no interest and no involvement of the central and local authorities towards this issue, even vanity or lack of education. It can be concluded that in RO IAS are not a priority now and agencies that need to be informed about the issue know very little of the current situation or this Regulation.

Another respondent from those seven mentioned, expresses the following regarding the status in Romania:

"On this subject, I do not know if they ever talked about it at the national level in some sort of a meeting. Occasionally, the matter arises in protected areas when there are problems with some invasive species, but the situation always remained in the air. It has never passed the current level." (RJ)

It appears that he is unaware of any meetings or briefings from the national level about the IAS Regulation and that the IAS issue appears as a problem only in limited areas.

Briefings from central authorities are sent, but no national meetings are being held. The IAS issue is sometimes mentioned in protected areas but nothing more.

As a third Romanian respondent mentions the lack of cooperation and coordination between national and subnational levels:

"Central authorities do not get involved enough in handling problems at local authorities. Central authorities work directly only with those in Bucharest. In seven years' time since I

work here no one has raised the issue of IAs at a local authority level. I worked for 12 years in the Autonomous Transport Administration. There exists a Union of Romanian Transport with monthly meetings, where all the problems were sent to scientists from the territory. The information was gathered for transport issues, the legislation was very well planned. It is uniform at European level, but after learning the particularities of the territory. [. . .] it is a massive problem that those in charge in Bucharest do not know our problems in the field. I doubt that they can pass anything on to Brussels. It is a total rupture of information and the cooperation at national level does not exist." (RC)

Central authorities do not work with local authorities, so these do not receive the needed support from the higher authorities and their opinions are not taken into consideration.

The most relevant issue in RO is the implementation by the Ministry of Environment, the Environment Agency, and the Environmental Guard; these three institutions hold the most vital role. New internal regulations were said, in the summer of 2015, to follow soon.

The last two Romanian interviewees asked out of all 14 do not know anything precise about a national cooperation. They mentioned other issues from other work areas with focus on captivity of threatened or endangered species of plants and animals that receive support from central, county, and local levels and that these issues were resolved quickly in the past. As for the IAS, if some working guidelines, brochures, or expert trainings would exist, the situation could be better in this field as well.

In the opinion of more than 50% of the Austrian respondents, the transnational cooperation and coordination on the implementation of the IAS Regulation takes place at the federal state level and at federal provinces level this cooperation is not a priority. As for the Romanian respondents, transnational cooperation happens mostly at the central level and less at the subnational level.

The opinion regarding national cooperation and coordination on the implementation of the IAS Regulation in AT is split equally in two positions: for and against it. A more positive first half of Austrian interviewees spoke about a conflictual, complex situation between the federal state, federal provinces and between federal provinces. However, an existent IAS platform helps the engagement of all stakeholders in meetings, spreads information, reports from discussions in Brussels and provides a voting procedure, all opinions of those involved in the issue of IAS Regulation are gathered and taken to Brussels. Federal provinces must organize themselves in this cooperative process. The other half of the Austrian interviewees see the national dynamic between competences in a rather negative light and do not want to get involved in a discussion about this topic.

In RO such a platform as in AT does not exist, but desired by many interviewees, that—independently from this study—knew about this Austrian platform and some of them even mentioned similar coordination tools in other MS, such as Great Britain, Italy, France and Spain. The national cooperation is poorly developed, especially between the central competences and the subnational ones. Usually, all decisions are taken at a central, national level and the opinion of the subnational competences is not, or too little is, taken into consideration.

In summary, national cooperation and coordination are described by respondents in both countries weaker than the transnational ones.

4. Discussion

For those researchers interested in deepening the issue, this empirical study strives to improve the implementation of supranational mandatory legislation between supranational, national and subnational levels on the example of the EU-IAS-Regulation, and to enhance the importance of communication between scientists, researchers, policy makers and other stakeholders from all levels.

The legal framework of the IAS Regulation provides a "hierarchical approach of prevention, early detection as well as rapid eradication, and management as a last resort" [36] (p. 346). The success of the implementation lays upon the IAS being included in the Union list and in the timely support of the European Commission as well as of the MS. Very important are the MS' actions regarding the enhanced cooperation and coordination on IAS of regional concern. To effectively tap the full potential of the

supranational regulation to pierce through multi-layered levels of governance, the transboundary nature of the issue must be recognized and pragmatically researched [11,36].

The two assessed situations of national cooperation and coordination in AT and RO make it difficult for the EC to receive a realistic image of the situation of IAS and the implementation of the IAS Regulation in a MS. It would be difficult to offer helpful support, if national cooperation and coordination is poor, such as in AT and RO respectively. It can be considered a limitation of EU environmental law implementation. It particularly occurs when MS face problems of coordination between national and subnational levels, regardless of their competence distribution. Yet, the distribution of national competences influences the solutions to these problems and shows how national coordination can enhance the national and regional cooperation. The mandatory cooperation laid down by the TEU can fail in practice when MS might have different opinions about the extent of their discretion when implementing this duty and a different perception about what has to be done in order to ensure the effectiveness of EU-law (and to prevent infringement procedures initiated by the EU-Commission in order to secure the correct implementation of the Regulation) [38].

5. Conclusions

Competence distribution is a part of the constitutional law both in Austria and in Romania. The ineffective implementation of the IAS-Regulation leads to the question whether, and to what extent, there are constitutional limits for the implementation of EU law or modifications of constitutional distributions of competences on the national level through EU law. While within the EU the sovereignty of its Member States remains related to their internal organization for distribution of legislative and administrative powers, the effectiveness ("effet utile") of the transposition and implementation of the EU-law must be ensured. This implies that even originally sovereign subnational and national units are meant to cooperate and coordinate beyond the current separate distribution of competences laid down in the constitution. This is apparently also valid regarding the implementation of the IAS-Regulation. The relevant competence distribution laid down in the respective national constitution is, in this way, supplemented by a duty to cooperate as well as to coordinate, and insofar modified.

This can be achieved through trans-, national, and regional cooperation and coordination. It is also concluded that the current situations of cooperation and coordination in AT and RO make it difficult for the European Commission to receive a realistic image of the situation of IAS and the implementation of the IAS Regulation in a MS and to offer helpful support, especially due to poor national cooperation.

More studies on the openness and awareness of nations and stakeholders to cooperate could improve the approach to a much-needed sustainable future and strengthen coordination at supranational, national and especially at subnational levels. A potential future research direction regarding IAS would be to assess, in detail, the cooperation and coordination at the subnational level between neighboring countries and then expand to non-EU-countries. These studies might help track the pathways which IAS use to spread and to learn

(1)　how to best deal with such situations,
(2)　how to improve the practice of already existing personnel with less financial means and
(3)　how to efficiently use human resources and already existing personnel and departments at border controls.

These kind of studies might also help detect sensitive issues such as legal and administrative issues between MS, but especially between MS and non-MS (e.g., the border with Switzerland and other non-EU-countries that border the European Union).

A better understanding of the cooperation and coordination between competences and relevant stakeholders can lead to improvement for

(1)　a more effective implementation of a supranational legislative act,

(2)   a more unified legislative framework at national level and

(3)   a more diverse and adjustable law enforcement through a more involved administration at subnational level.

The main direct benefits of a strong cooperation and coordination are better funds and an improved management (detection of 'priority pathways', motivation for the development of national and regional lists, etc.). Weaker national cooperation and coordination happen in AT and RO mainly because of the influence which nature conservation power divisions have at a subnational level and because of the allocation of funds and financial means [11] (pp. 51–52). For cooperation to work, coordination between nations and stakeholders is needed. Coordination plays the operating role of the rules for the environmental agreement, as exemplified in this IAS Regulation for all three big aspects of prevention, early detection and rapid eradication, and management. However, for these rules to work, knowledge of the structure (competence distribution) of nations and their interest (mostly economic interests) as well as all involved parties are crucial for achievable, healthy working cooperation and coordination [33]. These interests must cover the understanding that environmental resources (or ecosystem services) are globally limited and sustainability is not just an option, but a mandatory aspect in today's human and economic development.

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Appendix A

Table A1. Details about Data Collection.

Country	Respondent Code	Status as Public Authority or NGO	Jurisdictional Type of Competence (Legislation/Enforcement)	Stakeholder Workplace	Survey Date	Interview Date	Type
Austria	AA	National	Both	University, science	10 June 2015	13 July 2015	Meeting
	AB	National	Both	Federal ministry	10 June 2015	16 June 2015	Meeting
	A1	NGO	None	NGO	15 June 2015		
	AC	National	None	Company	17 June 2015	18 June 2015	Meeting
	AD	National	Both	Federal authority, science	19 June 2015	14 December 2015	Meeting
	AE	National	Both	Federal authority	21 June 2015	13 July 2015	Meeting
	A2	Subnational	Both	Provincial agency/department	25 June 2015		
	A3	Subnational	Legislation	Legally intended representation of interests	08 July 2015		
	A4	Subnational	Enforcement	Provincial agency/department	13 July 2015		
	A5	National	None	Federal agency/department, science	21 September 2015		
	A6	NGO	None	NGO	22 September 2015		
	A7	National	Enforcement	Federal agency/department	22 September 2015		
	AF **	National	Partial enforcement *	Federal authority	23 September 2015	18 June 2015	Meeting
	AG **	Subnational	Both	Provincial agency/department	22 October 2015	17 June 2015	Meeting
	AH **	Subnational	Both	State authority	28 October 2015	23 June 2015	Phone
	A8	Subnational	Enforcement	Independent, state agency/department, science	08 November 2015		
Romania	R1	National	Enforcement (Regulation)	Institution of higher education	17 July 2015		
	RA	Subnational	Both (Legislation, Control, Administration)	Public local institution	18 July 2015	09 September 2015	Meeting
	RB	Subnational	Enforcement (Control, Administration)	Public local institution	19 July 2015	09 September 2015	Meeting
	RC	Subnational	Enforcement (Administration)	Public local administration	20 July 2015	09 September 2015	Meeting
	R2	Subnational	None	Company	28 July 2015		
	RD	National	None	Further education, Institution of higher education, Science	27 August 2015	10 September 2015	Meeting
	RE	National	Both (Legislation, Regulation)	Public national institution	02 September 2015	02 September 2015	Meeting
	RF **	National	None	Institution of higher education	16 September 2015	8 September 2015	Meeting
	R3	National	Both (Legislation, Regulation)	Public national institution	16 September 2015		
	R4	National	None	Science	17 September 2015		
	RG	NGO	Both (Legislation, Administration)	NGO	30 September 2015	6 October 2015	Phone
	R5	National	Enforcement (Control)	Public national institution	01 October 2015		
	R6	National	Enforcement (Regulation, Administration)	National authority	02 October 2015		
	RH	NGO	None	NGO, science	04 October 2015	5 October 2015	Phone
	R7	Subnational	None	Public local administration	05 October 2015		
	R8	National	None	Institution of higher education	05 October 2015		
	R9	National	None	Institution of higher education	06 October 2015		
	R10	NGO	None	NGO	06 October 2015		
	R11	National, NGO	Skipped question	Institution of higher education, NGO	07 October 2015		
	R12	National	Legislation	National authority, public national institution	09 October 2015		
	R13	National	None	Public national institution	09 October 2015		
	RI	Subnational	Enforcement (Control, Administration)	Private forestry administration	09 October 2015	9 October 2015	Phone
	R14	National	Enforcement (Administration)	PFA, institution of higher education, NGO	09 October 2015		
	R15	NGO	Enforcement (Administration)	Legal entity, NGO	10 October 2015		
	R16	Subnational	Enforcement (Administration)	Independent administration	12 October 2015		
	R17	National	Enforcement (Administration)	Public national institution	13 October 2015		
	RJ	National	Both (Legislation, Regulation)	National authority	15 October 2015	20 October 2015	Phone
	RK	NGO	None	NGO	16 October 2015	22 October 2015	Phone
	RL	National	Enforcement (Regulation, Control, Administration)	Public national institution, NGO	18 October 2015	28 October 2015	Phone
	R18	National	Both (Legislation, Regulation, Administration)	Public national institution	19 October 2015		
	RM	NGO	Both (Legislation, Regulation, Control, Administration)	NGO	19 October 2015	29 October 2015	Phone
	RN ***	Subnational	Enforcement (Control)	Public local institution	no survey	13 July 2015	Meeting

* Skipped question about the level of competences, verbally checked-answer: skipped question, because it is no fitted option for respondent, but "partially" (AF)-still counts as enforcement in the survey analysis. ** Respondents who first did the interview and afterwards sent the survey. *** Only interview, no survey-only in the qualitative analysis of the semi-structured interview.

Table A2. Frequency of cooperation and coordination in the IAS Regulation and their main context.

Cooperation		Coordination		Type
Location in IAS Regulation (EU No. 1143/2014)	**Context**	**Location in IAS Regulation (EU No. 1143/2014)**	**Context**	
Preamble (16)	Regional (between Member States MS)—to include species with smaller populations on the Union list.			Transnational/National
Preamble (27)	Cross border (between neighboring countries/same biogeographical region of the Union)—for an effective application of the IAS Regulation.	Preamble (27)	Between MS—same goal as for cooperation.	Transnational
Preamble (31)	Regional (between MS)—for different decisions like e.g., updating the Union List, permits, adoption of emergency measures, etc.			Transnational/National
Art.10	Regional (between MS)—for emergency measures, including species in national lists, in accordance with Art.11 (IAS of regional concern and species native to the Union).			Transnational/National
Art.11 (1)	Regional (between MS)—required for clearing up situations of species from national list (IAS of MS concern).			Transnational/National
Art.11 (2) ×2 *	Facilitated by the European Commission EC (between involved MS) + justified regional cooperation (between MS).	Art.11 (2)	Facilitated by the European Commission EC (between involved MS).	Transnational
		Art.13 (3)	MS or regional—establish one single action plan (MS) or a set of action plans (regional level).	Transnational/National
Art.15 (7)	MS—ensure exchange of relevant information and the efficient and effective coordination and cooperation between all competent authorities involved.	Art.15 (7)	Same as for cooperation.	National
Art.22 (title)	Together with coordination in the title.	Art.22 (title)	With cooperation in the title.	
		Art.22 (1) x3 *	With all MS—if necessary, use existing regional and international agreements.	Transnational
Art.22 (3) ×2 *	MS—also on species from national lists; establish mechanisms (exchange of information and data, action plans on pathways and exchange of best practice on management, control and eradication of IAS, early warning systems and programmes related to public awareness or education).	Art.22 (3)	Same as for cooperation.	Transnational/National

* more than one occurrence in the same preamble or article (×2 or ×3).

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