

Voluntary Agreements: First Choice or Escape Strategy? – Invasive Alien Species as a Case

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Abstract

Voluntary agreements play a role in German biodiversity policy, which is a highly cross-sectoral policy field. We explore the question of the extent to which the choice in favour of voluntary agreements is affected by the interrelation of policy sectors, using the issue of invasive alien species as a case study.

We develop an analytical framework for explaining the instrument choice based on the theoretical framework by Böcher and Töller. This framework states the influence of the factors of “institutions”, “discourses on instrumental alternatives”, “problem structure”, and “actors and the decision situation”, on the “instrument choice”. We modify this framework in two respects: We specify the framework for decision making within cross-sectoral policies and with view to the choice between voluntary agreements and regulatory instruments.

The application of the theoretical framework to the policy of invasive alien species leads to eight arguments explaining the choice in favour of voluntary agreements. In evaluating these arguments we find four arguments that provide evidence for an escape choice. Three arguments see voluntary agreements as first choice, one of these as priority measures against regulatory instruments; and the other two as supplements to regulatory law. One argument would support not to develop substantial policy-making activities. Six of the eight arguments show evidence for an influence of policy sector interrelation on the choice and two arguments are independent from this aspect.

The conclusion is that voluntary instruments can be partly seen as being the first choice for nature conservation actors. But there is a strong evidence for voluntary agreements being part of a selective policy strategy that uses this instrument as an “escape strategy” and as a substitute for hierarchical regulation that is politically blocked by powerful land-use and commercial interests.

Zusammenfassung

Freiwillige Vereinbarungen spielen eine Rolle in der deutschen Biodiversitätspolitik, die sich durch eine starke Querschnittsorientierung auszeichnet. Damit stellt sich die Frage, welchen Einfluss die Beteiligung mehrerer Politiksektoren auf die Entscheidung für freiwillige Vereinbarungen hat. Der Beitrag untersucht diese Frage am Beispiel invasiver gebietsfremder Arten.

Unser Analyserahmen zur Erklärung der Instrumentenwahl gründet auf dem von Böcher und Töller entwickelten Theorierahmen, nach dem die Faktoren „Institutionen“, Diskurse über Instrumentenalternativen“, „Problemstruktur“ sowie „Akteure und Entscheidungssituation“ die Instrumentenwahl beeinflussen. Wir modifizieren den Analyserahmen mit Blick auf den Einfluss der Politiksektoren. Für die Instrumentenwahl unterscheiden wir zwischen freiwilligen Vereinbarungen und regulativen Instrumenten.

Die Analyse des Fallbeispiels ergibt acht Ausprägungen der erklärenden Variablen, die einen Einfluss auf die Instrumentenwahl zeigen. Vier Argumente erklären freiwillige Vereinbarungen als Ausweichentscheidung, drei Argumente erklären freiwillige Vereinbarungen als erste Wahl, davon eins als alleinige Maßnahme und zwei als Ergänzungen zu regulativen Instrumenten. Ein Argument begründet es, keine wirksamen Instrumente zu entwickeln. Sechs der acht Argumente zeigen einen Einfluss von verschiedenen Politiksektoren auf die Entscheidung, während zwei keinen Einfluss anzeigen.

Im Ergebnis ist festzustellen, dass die Entscheidung für freiwillige Instrumente komplex ist und es nicht nur eine Erklärung gibt. So gibt es Hinweise auf eine Entscheidung für freiwillige Vereinbarungen als erste Wahl, die allerdings eher schwach sind. Dagegen überwiegen die Erklärungen für eine Ausweichstrategie. Danach werden freiwillige Vereinbarungen als Ersatz für regulative Instrumente gewählt, die durch sektorale Politiken blockiert sind.

1 Introduction

In the German policy on biological diversity, voluntary agreements play a role within a policy mix of different types of instruments. In this policy the framework conditions for decision making are shaped by the interplay of several policy sectors resulting from the development of the field. The history of a comprehensive biodiversity policy is still young, formally starting in 1992 with the international *Convention on Biological Diversity* (CBD). The instruments of this new policy field were developed within the framework of already existing policies. This occurred not only in one single policy sector, but rather, biodiversity policy developed across different policies, building upon their established procedures and instruments. Hence, it is a characteristic of this policy field to be highly cross-sectoral. Originally placed within the nature conservation sector, biodiversity reaches far beyond this traditional policy field, to include many other sectors. Additionally, it focuses not only on protection, but also on the sustainable use of the biodiversity and on benefit sharing. Hence the coordination of sector policies is a crucial topic in this policy field (Hubo, Krott 2010 a). Within the coordination processes the different policy sectors concerned due to their competences and interests have an impact on the choice of instruments.

Against this background the question arises as to the extent to which the choice of instruments is affected by the involvement of several policy sectors with their various aims and interests. Are voluntary agreements chosen because the decision-makers in charge believe that they are adequate, or are there other, namely sector-related, incentives or obstacles that explain the choice?

We want to explore this question by examining the example of invasive alien species. This issue has high priority in international biodiversity policy because, in a global perspective, invasive alien species are recognised as one of the most important threats to biological diversity. They are currently on the political agenda of the European Commission, which is preparing a dedicated legislative instrument on invasive alien species (EC 2011, p. 13).

Many political sectors are involved with this problem, making the issue particularly suitable as a case study. The decision making in this young and evolving field is not yet well known; that is why we choose an explorative approach that allows to develop new concepts and to find unknown interrelations.

Before developing the study's analytical framework (chapter 3) to be applied in chapter 4, let us first introduce the biodiversity policy issue of invasive alien species, including a short overview of the problem field and the relevant policy instruments.

2 The biodiversity policy issue of invasive alien species

2.1 The problem field

Biological invasions caused by human activities are recognised as one of the most important threats to biodiversity in the world. The problem concerns not only the old immigration countries like the USA, Canada, or Australia, where the problem had its starting point, caused by immigration from Europe bringing plants and animals from their home regions to the new areas. Today Europe is also strongly concerned. The problem here is driven mainly by the globalisation of markets, and it is expected to increase in the future, strengthened by increasing trade, tourism and climate change (EEA 2012).

According to the CBD, species are called “alien” if they are introduced to environments where they do not occur naturally. In cases where they establish themselves in the new habitat and threaten natural species or change landscapes they are “invasive”. Besides harming native biodiversity, they can also have a negative impact on human health and can cause great economic damage (EEA 2012).

In Germany more than 800 alien species are known to be established, but only few have become invasive, threatening the local biodiversity (Kowarik 2010). To date, 26 species, half of them plants and half animals, are recognised as being invasive (Rabitsch et al. 2013).

Alien species are introduced by different kinds of human activity that involve either the unintentional introduction of species

that are carried along as “hitchhikers” or contaminants or the intentional introduction that brings benefits to specific sectors of society and produces high economic profit. Most alien species present in Europe were introduced intentionally.

As regards the introduction pathways, many sectors are involved, such as agriculture, forestry, fishery, hunting, gardening, horticulture, trade and all kinds of traffic. Most invasive plants originally escape from gardens or aquaria. Problems are caused mainly by the introduction of alien plants for horticultural purposes. In the horticulture sector species are introduced generally intentionally, but the release and spread occurs unintentionally in most cases (Weber 2004, Dehnen-Schmutz et al. 2007, Starfinger 2012).

2.2 Policy instruments in Germany

Internationally, a "three-stage hierarchical approach" has been agreed to as a standard policy response to the threats of invasive species (CBD Guiding Principles, 2002). The first stage is prevention, which has the highest priority because it is the most efficient and environmentally desirable way. If prevention is not successful and an invasive species is introduced, early detection and rapid eradication are indicated, backed by early warning and information exchange. Where these measures are not feasible, control and long-term containment are proposed for the last stage.

In accordance to the precautionary approach, policy instruments in Germany address primarily the introduction of species. The introduction can be controlled or regulated by regulatory instruments that the government prescribes hierarchically, or by agreements with the addressees that are negotiated. Additionally, informational measures can be used.

In Germany both regulatory and voluntary instruments are established. Prevention is addressed by a few regulatory instruments:

- Authorization is required for releasing species into the landscape (Ausbringungsgenehmigung).

- There are hold and trade bans for listed species (Besitz- und Vermarktungsverbote).
- Since 2010, the authorisation requirement is supported by a regulation that declares releases of alien species to be an administrative offence, subject to penalty (Hubo, Krott 2010 b).
- To prevent a loss of genetic biodiversity in plants, the introduction of woody plants and seeds is allowed only in areas where they grow naturally (Nehring 2012, p. 59). However, this regulation, introduced in 2009, will come into force starting only in 2020 as a regulatory instrument.

A voluntary instrument is the agreement between the Central Horticulture Association and the Federal Ministry of Environment. Therein the association commits itself to informing members and customers about recommendations for the handling of specific alien plants (Zentralverband Gartenbau 2008).

An important prerequisite for regulatory as well as voluntary instruments is the risk assessment of alien species. Tools and methods for scientifically-based black lists that are non-binding are developed (Nehring et al. 2010, Rabitsch et al. 2013).

Other instruments regulate the control and eradication of established alien invasive species, addressing mainly obligations for public administrations. Additionally, agencies are authorised to give orders for to remove invasive species that are either introduced without authorisation or unintentionally released. If possible, the agencies have to hold the causer liable (Hubo, Krott 2010 b).

In a field with such widely diversified relevance and corresponding competences, the formulation of an overarching strategy is indicated. Within the framework of the CBD, the contract parties agreed to the development of national strategies (Art. 6 CBD). Germany has presented a *National Strategy on Biological Diversity* that was adopted by the government in 2007 (BMU 2007). The strategy of biodiversity was accompanied by an attempt to formulate a specific strategy to deal with invasive alien species. A first phase was a scientific analysis for the years 2003 to 2005. After that, the work on a specific strategy on invasive alien species came to a standstill and all strategic activities of the

government were focused on a comprehensive strategy for biodiversity. This is a basic program that aims to develop detailed measures by 2015. Even if the details are still under development, general decisions are fixed in the strategy, so that we can look at the influence the strategy already had on the choice of instruments.

Taking all these instruments into consideration, the issue of invasive alien species is far away from being regulated effectively. There are some regulatory instruments but they lack impact due to exception rules, missing implementation tools and non-application. Nevertheless, in the last years there were attempts for improvements by sharpening regulatory instruments but with only little success. Additionally, voluntary instruments came into force. Our question is, why the latter have been chosen.

3 Analytical framework for explaining the instrument choice

The specific influencing factors for instrument choice within the evolving field of biodiversity policy have so far not been analysed. This article aims to provide a framework for analysing the influences on decision making taking into account the cross-sectoral characteristic of the field.

3.1 Theoretical approach

While many studies explaining the choice of instruments in environmental policy, rely on “public choice theory” or “naïve instrumentalism” (Böcher, Töller 2003), we choose the theoretical framework developed by Böcher and Töller (2007, Böcher 2012) for analysing possible factors that explain the choice of voluntary instruments in the case of invasive alien species. This framework combines different variables that refer to institutionalised power structures, actor centred approaches, discourse analytical backgrounds and factual requirements, integrating elements of competing approaches. Hence, the framework is broad enough to identify all possible influences on the choice of instruments and also helps to focus on the main aspects.

The theoretical framework by Böcher and Töller systematizes the influence of the factors of “institutions”, “discourses on instrumental alternatives”, “problem structure”, and “actors and the decision situation” and their interplay, on the “instrument choice” (Böcher 2012, p.16). We understand these factors as having the potential to explain the choice of instruments in general. Since it is not a theory but an analytical frame that points to factors that may play a role, the extent to which the factors mentioned do indeed influence a decision is open and needs to be analysed for concrete situations. It is our argument, that in cross-sectoral policies the involvement of several policy sectors shapes the characteristic of the explaining factors. In doing so, the interrelation of policy sectors has an influence on the specific choice between voluntary agreements and regulatory law (Fig. 1).

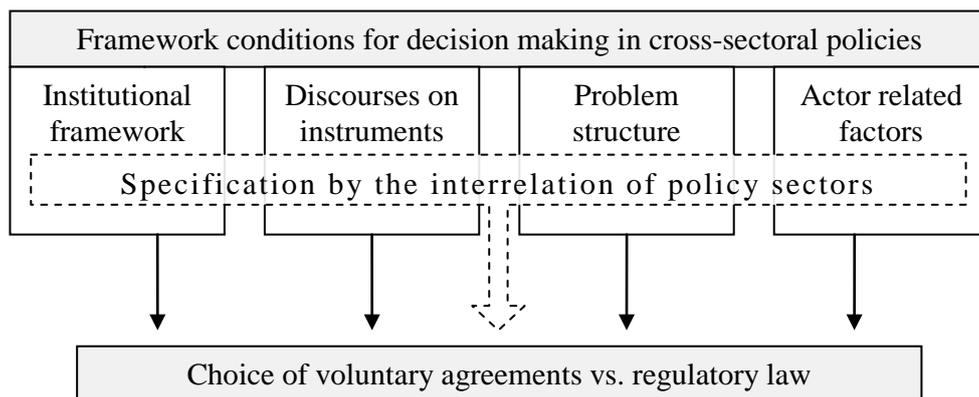


Fig. 1: Analytical framework for explaining the choice of voluntary agreements (based on Böcher and Töller 2007, modified)

The model contains two modifications of the analytical framework that are explained below.

3.2 Specifying the framework conditions by the interrelation of policy sectors

Our first focus is to find out whether the interrelation of policy sectors plays a role in the choice of voluntary agreements. Therefore we analyse the influence of the four independent factors of the theoretical framework and look, in a further step, at the extent

to which the interrelation of policy sectors affects these factors and their influence on instrument choice.

The worldwide call for inter-sectoral coordination since the late 1980s (Verbij 2008) shows that the impact of policy sectors on decision-making within land use governance is widely recognised. But scholars focus mainly on methods how to restrain this influence by coordination, whereas the details of the sector influences have not been in the centre of academic interest. As an analytical approach, the concept of policy sectors helps us especially to understand interest-based decisions that are basic in politics. Political sectors describe the political system as being fragmented into areas that focus on specific public tasks, such as environment, agriculture or water management. Fully developed policy sectors consist of the following elements: programs that describe the substantive and institutional constitution of the sector, public and private actors, and administrative institutions and procedures for decision-making, wherein public actors and private organisations work together in strategic interactions (Hubo, Krott 2010a: 222; Hubo, Krott 2012). Hence, sector-based policy-making is a big challenge for comprehensive and cross-sectoral political issues. These demand for decisions that integrate the sector policies involved, and require their coordination. But policy sectors develop their own realms that they defend against other policy sectors, as several studies on land-use policy show (Giessen et al. 2008).

The issue of invasive alien species produces conflicts between the nature conservation sector and many other sectors, especially agriculture, horticulture and plant trade, water management, fishery, and others. These sectors that we call “user-sectors” are basically not interested in regulations restricting their activities, whereas the nature conservation sector is interested in establishing binding regulations that help to defend against invasive alien species.

Against this background we estimate that actors of land-use sectors and industry use their power to hinder binding regulations that restrict the trade and introduction of alien species. Our hypothesis is that public actors of the nature conservation sector choose voluntary agreements because they do not have enough

power to strengthen legally binding regulations such as regulatory law.

The second modification of the model refers to the choice of instruments as dependent variable. Our hypothesis includes the assumption of a relationship between the choice for voluntary agreements and the possibility of strengthening regulatory law as an instrument alternative. We focus on this instrument alternative as an example; other alternatives, like incentives by means of financial support are less relevant for this issue.

3.3 Analytical procedure

According to the theoretical framework, we analyse the instrument choice along the four aspects of (1) institutions, (2) discourses, (3) problem structure and (4) actors.

Institutions (1): We describe the institutional frame conditions for the policy formulation, reflecting established power relations, with a focus on the question of whether more strongly binding instruments would have been enforceable.

Discourses (2): A discourse on alternative instruments is reflected in different strategies and programs. We look at these for possible statements on voluntary agreements and reasoning regarding these.

Problem structure (3): When analysing the problem structure, we examine the suitability of the instrument alternatives for combating the introduction of invasive alien species.

Actors (4): Furthermore, we analyse whether actor-related factors could have an influence on the decision-making.

The results are evaluated for their content of arguments that provide evidence of the different kinds of choices. The influence of policy sector interrelation and the explanatory power of the policy sector approach will be assessed.

4 Influences on the choice of voluntary agreements as a way to combat invasive alien species

Analysing the four factors, we aim to find specifications of the factors which explain the choice of voluntary agreements for combatting the introduction of invasive alien species. The findings are summarised at the end of each factor analysis. The arguments are consecutively numbered facilitating to refer to them in the discussion and the overview in Table 1.

4.1 Institutional framework for decision making

The institutional framework for decision making in the field of invasive alien species shows a highly fragmented structure, both vertically, regarding the multi-level competence sharing, and horizontally, regarding the internal structure of governments.

Traditionally, the responsibility for nature conservation tasks lies with the federal states (Bundesländer). Only few legislative competences were at the national level, and these were specially for formulating frame conditions. Hence, the possibilities of the Federal Government to engage in formulating legislative instruments for nature conservation were restricted. But this situation changed due to the federalism reform in 2006, which strengthened the competences at the national level in the field of nature conservation. The Federal Government made use of the new competences and sharpened several legally-binding instruments on invasive alien species within the amended nature conservation law that came into force in 2010 (Hubo, Krott 2010b). This is the case especially for the authorisation requirement for releasing species in the unsettled landscape, and the hold and trade bans. But the latter instrument still requires the consent of the Ministry of Environment and the federal states via the Federal Council (Bundesrat), the representative body of the federal states executives. The Ministry of Environment is empowered to list species that fall under the hold and trade bans in the species protection act, but the Federal Council has to agree with those decisions. Hence, the barrier to find acceptance for listing species in this legally binding “black list” is relative high including good chanc-

es for public actors of user sectors to prevent the listing of species. In practice, the instrument is used very rarely and targets only four animal species. Furthermore, the new competence was used to establish the release of alien species as an administrative offence that is enforced by penalty, and the restriction of woody plants and seeds to their natural area which will be binding only in ten years.

The legislative competences in the field of alien species are fragmented also within the Federal Government and within the governments of the federal states. Aside from the environmental sector, many other sectors are involved in this issue, namely agriculture, forestry, water resource management, energy production, health, military, commerce, trade, infrastructure and traffic. The cross sector character limits the regulative competence of the Ministry of Environment which has to find a majority for decisions of the Government within the Cabinet. The influence of other sectors' interests is already evident inside the originally environmental realm, as two examples demonstrate: (1) The restriction on woody plants and seeds to their natural area met such strong resistance from land-users and commerce that it was enforceable as a binding regulation only with a delay of ten years (Hubo, Krott 2010 b). (2) The nature conservation law includes exceptions in the authorisation for alien species releases: introducing plants for forest and agriculture purposes, in settled areas, and introducing certain animals for hunting, fishery and plant protection are not within the scope of the authorisation requirement. This applies only to releases into the open landscape and for fishery purposes. The amended nature conservation law could extend the scope only for animal releases into the settled areas. Hence, it is evident that the scope of this legally binding instrument ends at the realm borders of the other sectors.

It is exactly at these borders that voluntary instruments have their starting point: the agreement on invasive species between the Central Horticulture Association and the Federal Ministry of Environment indicates explicitly that the scope covers first of all the use of plants in the settled area and for agriculture and forest purposes, whereas the introduction of plants into the open land-

scape is regulated by the authorisation requirement of the nature conservation law (Zentralverband Gartenbau 2008, appendix).

Summarising, the factor “institutional framework” influences the instrument choice in two ways:

- (1) Strengthened national competences in nature conservation were used to improve regulatory instruments. But fragmented competences between the national level and the federal states level via the Federal Council still hamper the effective application, for example, of a legally binding black list for hold and trade bans.
- (2) Regulatory instruments were strengthened within the limited realm of the nature conservation sector. But fragmented, sector-related competences of Ministries lead to restricting the scope of regulatory law, for instance, of the authorisation for releasing alien species.

4.2 Discourses on instruments within strategies

Political instruments are not only means to pursue political objectives. They are themselves subjects of political processes which is particularly reflected in discourses on instruments. In the field of invasive alien species, we find contributions to instrument discourses in strategies and guidelines that exist at different political levels.

The scientifically-based *Global Strategy on Invasive Alien Species* recommends the national strategies to include the “encouraging and contributing to the development of collaborative industry-improved standards of practice, guidelines or codes of conduct, which minimize or eliminate unintentional introductions” (McNeely et al. 2001, p. 35). But this is mentioned only as one element that is additional to regulatory instruments. In addition, the IUCN *Guide to Designing Legal and Institutional Frameworks on Alien Invasive Species* states that “basic regulatory requirements should be complemented where possible with measures to maximise voluntary approaches to compliance” (Shine et al. 2000, p. 61). The *European Strategy on Invasive Alien Species* (Council of Europe 2003) that was developed in the frame of the *Bern Convention* of 1979, referring to parties' com-

mitment “to strictly control the introduction of non-native species” (Art. 11.2.b), has as one of its aims that “States make all efforts to permit only those species that are unlikely to threaten biodiversity” (point 5.2). Proposed instruments are, among others, black lists for species whose introduction is strictly regulated. Codes of conduct and technical guidelines are recommended as appropriate instruments for minimising unintentional introductions resulting from sectoral activities (point 5.3). The strategy recommends the evaluation of voluntary approaches and the development of regulatory measures where necessary (point 3.6). The scientific rationale for the voluntary approach is the principle of self-regulation, which is suggested to be more successful and effective than legally binding schemes. But at the same time it is expected that, for instance, the voluntary *code of conduct on horticulture and invasive alien plants* should operate alongside legally binding instruments (Council of Europe 2011, p. 23). These examples show that discourses within the frame of international regimes have supported voluntary measures. But this support is limited to their use for specific problems (preventing unintentional introduction) and meant as complements to, not as substitutes of regulatory instruments.

In Germany there are two initiatives on this issue. Science-based principles for a national strategy on invasive alien species contain mainly proposals for improving regulatory instruments but also some voluntary measures; and they state that the chances for the latter will be limited due to the resistance of other policy sectors (Hubo et al. 2007). The *National Strategy on Biological Diversity* (NBS), officially adopted by the German Federal Government (BMU 2007), contains statements on both regulatory and voluntary instruments. The strategy generally calls for implementing the legislative instruments for preventing the introduction of invasive species, but does not mention new regulatory instruments, like black lists. Instead, it proposes the development of “recommendations on the handling of non-native invasive species for gardeners, users, and garden and landscape planners (Central Horticultural Association)” (BMU 2007, p. 68, en. version p. 88). Hence, this contribution to the political discourse includes neither the approach of voluntary measures supplementing

regulatory instruments nor the need for special legally binding instruments for the intended introduction.

Some German federal states also developed governmental biodiversity strategies that contain statements on invasive alien species. None of them focusses on legally binding regulations but all stress the importance of informing potential addressees and of technical support (BfN 2013).

In regard to national discourse contributions, it can therefore be said that only the science-based principles for an invasive alien species strategy stress the requirement of developing regulatory instruments. Within the political strategies there is, in contrast, a tendency towards voluntary approaches at the national and even more so at the subnational level, avoiding strong regulatory instruments. To some extent these political contributions have been developed in participatory ways and have officially been adopted by the respective governments. As comprehensive cross-sectoral programmes they are built on compromises and are influenced by several policy sectors. The result is in line with the interests of land-users and commerce, promising a minor degree of state intervention.

Even the Ministry of Environment advertises voluntary commitments, referring to the agreement with the Central Horticulture Association (BfN 2010). Generally, the German Federal Government gives priority to cooperation with business companies within the biodiversity policy. This becomes evident in the international business and biodiversity initiative *Biodiversity in Good Company* that Germany has promoted within the framework of the CBD regime since 2008 (BMU 2012). These initiatives aim to foster private engagement, mobilising private capital and motivating companies with benefits and less regulation (see the platform www.business-and-biodiversity.de/en).

Based on discourses we found evidence for the two arguments:

- (3) International discourses emphasize voluntary measures, but are limited to specific problems and to supplementing regulatory instruments.

- (4) At the national and subnational level voluntary measures are also emphasized but without limitations. Programmes that are cross-sectoral in part focus on voluntary approaches, avoiding state interventions, in line with the interests of land users and industry.

4.3 Problem structure

Aside from political influences, the question arises of the suitability of legally binding and voluntary measures for preventing the introduction of invasive alien species and whether the problem structure itself causes the instrument choice. The main problem features in this respect are scientific uncertainty, the need of preventive measures and insufficiency of controls.

It can be argued that regulatory instruments require certain and reliable knowledge. Environmental issues very often cannot provide this certainty but are in need of preventive measures at early stages (Böcher, Töller 2007, p. 309). In case of invasive alien species, required knowledge concerns the pathways of alien species' introduction and how the species behave within the new environment, especially whether they threaten native species and biological diversity. Therefore science-based risk assessments and information sharing are suitable instruments, and both are under development. Data banks provide information on specific alien species (www.floraweb.de, www.nobanis.org) and a risk assessment tool serves as a guideline to develop differentiated species lists (Essl et al. 2008, Nehring et al. 2010, Essl 2011). These lists would allow for quick reactions, flexible action and even taking scientific uncertainties into account.

However, the question is how to deal with the result of these procedures. Should an alien species with supposed or proven invasive impacts on biodiversity become the subject of a binding regulation prohibiting its introduction, hold and trade? Or should there just be a recommendation not to use it, to be followed on a voluntary basis? The precautionary approach of the CBD justifies a regulatory solution, but prevention includes establishing measures before damages occur. If these measures are state interventions in the market, restricting commerce and trade, it is diffi-

cult to get them through decision-making processes (Burt et al. 2007, p. 910). In the case of successful policy formulation there are problems typical of regulatory instruments, even to the extent of forcing compliance if the addressees are not persuaded. Experiences in the case of *Trachemys scripta elegans* (Red-eared turtle), which is under the possessing and trade ban, have shown that the animal trade shifted immediately to other alien species with unknown effects (Rabitsch et al. 2013, p. 5). This is not necessarily an argument for the avoidance of regulatory instruments, but rather suggests supplementing them with less interfering measures.

Although the intentional introduction of alien species could be regulated by legally binding instruments that are likely to be politically hampered, as in the case of the German regulatory “black list” that exists in the context of hold and trade bans (see above), voluntary approaches are argued to be suitable for awareness building and to sensitise commerce and private actors (Starfinger 2012). The publicity of dangers and risks can help to avoid introductions. Propagating information on possible consequences related to liability regulations in cases where introductions may cause harm (Köck 2008) and calling attention to the removal order regulation can strengthen the effects of voluntary measures additionally.

Therefore the problem structure has two types of impact on the instrumental choice:

- (5) The problem structure leads to obstacles for regulatory instruments. The problem of scientific uncertainty can be handled by using differentiated species lists. However, it remains difficult to push politically regulations that are state interventions in the market and serve only for prevention.
- (6) It is argued that the divers and spread activities cannot be controlled sufficiently. But this argument does not justify a choice against regulatory instruments. Rather, voluntary approaches are suitable supplements to regulatory measures, especially in combination with liability law.

4.4 Actors

The driving actors in the policy of invasive alien species are nature conservation agencies and scientists. It can be stated that the professional background of the persons involved is the same in both groups; they are mainly biologists and they are related in part to gardeners within professional networks that foster the development of group identities. This background could lead to a certain affinity towards cooperation with gardeners, rather than their regulation, but this assumption needs further research.

In the beginning of the period where strategies on invasive alien species and instrumental improvements were developed, the Minister of Environment in office belonged to the Green Party (Jürgen Trittin, 1998 – 2005). Generally, within the programmatic and ideological orientation of this party, the issues of immigration, integration of foreigners and cultural diversity, all of which are related to human beings, form a complex that is an important field and that contributes to its identity. Hostility towards foreigners is a concept towards which they would be rather antagonistic. But an influence on the minister's decision at that time is not evidenced. In the recent past the Green Party explicitly cares for the issue of invasive alien species (Bündnis 90/Die Grünen Bundestagsfraktion 2012; Deutscher Bundestag 2013).

Hence, actor-related factors influencing the instrument choice cannot be found.

4.5 Link of institutional factors to actors as seen in the example of strategy and the Ministry of Environment

The four aspects of the analytical framework are not isolated from each other. Links to actor-related factors are especially important because here the actors develop their specific perception of the other factors: institutional frame, discourses on alternative instruments and problem structure.

The strategy on biological diversity builds strongly on its influence on all relevant actors by stating that “The players in industry and society must make this topic their own if the strategy is to be successfully implemented, and its targets met” (BMU 2007, en. version, p.8). The success of the strategy depends on

how the actors make use of it. This is the case for the actors in all sectors, but especially for the environmental administration, as the leading actor in the strategy. Therefore the strategy as an institutional framing factor and its use by the environmental administration actor are an example of a link between explaining factors.

Below we analyse the explaining power of this linkage of factors with a view on voluntary instruments within the policy mix in the field of invasive alien species. First we ask, in a theoretical perspective, for factors of strategies that influence the operations of administrative actors, namely the development of instruments as substantial policy making. In a second step we contrast the theoretical assumptions with empirical observations.

4.5.1 Effects of strategies on the operations of administrative actors

The classical idea of a strategy is the rationalistic planning paradigm (Tils 2005). Goals and means should be selected and formulated in order to develop options for steering and mobilising sources of different actors. The comprehensive approach and the orientation toward goals and effective and efficient means are stressed as the specific added value of strategies as compared to the uncoordinated activities of different actors. The claim is that the Ministry of Environment tries to formulate and implement with priority the measures that are mentioned by the strategy. In this measure, the strategy should contribute to the development of instruments.

In addition to these formal claims, political theories draw attention to important informal influences that are based strongly on communication (Krott 2005, p. 184). The government demonstrates, by means of a strategy, a strong engagement and high competence in the policy field of biodiversity. The strategy can be aided by symbols in order to raise awareness, expectations, fear or hope in the public (Edelman 1990). The symbolic impacts can be achieved even if the quality of the formal goals, selected means and optimisation is low. Increasing informal use of the strategy means the opposite of the formal rationalistic paradigm,

namely, that the strategy hinders the formulation of substantial instruments. The positive symbolic value of having a strategy sparkles so bright that the Ministry of Environment avoids the conflicts of formulating instruments and remains inactive as a consequence (formally unintended) of the strategy (Edelman 1990). This could evolve into a hampering effect on the development of instruments.

However, empirically speaking, administrations usually do not operate by following comprehensive strategies. Their actions are rather more of a “muddling through” as described by Lindblom's 1969 theory. The theory expects that administrations should proceed informally in an incremental manner. The agencies prefer small steps close to the day-to-day practice, which can be revised continually if the overall policy environment changes. The incremental orientation is the opposite of following a strategy that formulates goals and a priority set of means. But incrementalism differs from Edelman's hypothesis. Whereas Edelman expects a symbolic strategy to hinder the formulation of substantial policy instruments, incrementalism states that the administrative actor ignores any strategy and makes small substantial steps if possible. Based on incrementalism, the expectation is for the Ministry of Environment to push voluntary instruments forward whenever a policy window opens but to make no attempt at designing a serious strategy.

4.5.2 Strategy-related operations of the Ministry of Environment

In 2005 the issue of biodiversity became highly visible politically and the Ministry of Environment started a process with the aim of formulating a national strategy for biodiversity. The National Strategy on Biological Diversity that was adopted by the government in 2007 lacks the substance of binding agreements and instead of these, it addresses the responsibility of political actors and civil society, building strongly on their voluntary support. Even if the government has limited competence and financial and technical sources it could have organised its limited means into a strategy in a binding and strong manner. Such an alternative was not chosen, favouring instead a comprehensive strategy announc-

ing the need for coordination and broad engagement and providing a mainly symbolic policy. Informally, a non-decision was within the scope; the Ministry of Environment could decide not to develop instruments and to stay inactive under the symbolic umbrella of the strategy. The strong symbolic content is in line with Edelman's hypothesis.

Nevertheless, the explanation of the symbolic strategic behaviour does not cover the whole behaviour of the administrative actors that we observed. The Ministry of Environment financed a study addressing the development of a strategy on invasive alien species (Hubo et al. 2007). Neither Edelman's hypothesis nor incrementalism leads to the expectation that the Ministry of Environment would engage in a comprehensive scientific analysis of strategic options in the beginning. In this first phase of the strategy development the Ministry exhibited more substantial strategic behaviour than theoretically expected.

In the subsequent years we observed that the Ministry of Environment used the comprehensive scientific analysis as an information pool about options for the choice of instruments, including voluntary agreements. The agency made use of the analytical information for choosing incremental steps (Hubo 2012). Whereas with the "muddling through" mentioned above one would expect a complete absence of complex analysis, the Ministry of Environment financed a comprehensive analysis and used it later for "muddling through" whenever a policy window would open.

For the formulation of specific voluntary agreements the Ministry of Environment even applied elements of the supportive politics that the scientific analysis indicates, by mobilising new allies from the private sector. The strategy was used for selected power building for specific instruments.

The influence of actor-related factors linked to institutional factors on the instrument choice leads to the following arguments:

- (7) The formulation of a national biodiversity strategy is highly symbolic, as would be expected for such a conflictive cross-sectoral issue. The concrete options for a strategy on invasive alien species that are developed on a scientific basis are not incorporated into the official biodiversity strate-

gy. In particular, recommendations to strengthen regulatory instruments and not to rely on voluntary approaches were not integrated into the strategy. Hence, no formal strategic steps at the political level were undertaken to implement the specific options.

- (8) The Ministry of Environment reacted in two ways to the highly symbolic National Strategy on Biological Diversity that was reached. First, the symbolic umbrella did not encourage the Ministry to stay inactive. Rather, the Ministry kept active in an incremental manner. Second, and in contrast to the dominant incremental orientation, the Ministry financed and made use of a comprehensive scientific analysis, applying the developed options as a selective policy strategy. Both observations show that the informal interests of a ministry in formulating instruments, including those of a voluntary nature, in order to increase its influence, are strong and lead to activity whenever a policy window opens up.

5 Influence of competing policy sectors on the choice of voluntary instruments

The application of the theoretical framework shows that the four factors, “institutional frame conditions”, “discourses on instruments”, “problem structure” and “actor related factors” influence the choice of voluntary agreements and provide eight arguments to explain the choice in the case of invasive alien species (Table 1).

Table 1: Explaining the choice for voluntary agreements in the case of invasive alien species

Explaining factor	Specified by sectors*
1. Vertical fragmented competences	+
2. Horizontal fragmented competences	+
3. International impulses	0
4. National discourses	+
5. Scientific uncertainty	+

6. Divers and spread activities	0
7. Symbolic means of a national strategy	+
8. Strategy of selective policy integration	+
* + evidence for an influence; - evidence against an influence; 0 no evidence found	

In evaluating the eight factors explaining the instrument choice, we find four arguments providing evidence for an escape choice; these consider voluntary agreements to be substitutes for regulatory instruments that were blocked. Evidence for this mechanism is given within the institutional framework. The horizontal fragmented competences (no. 2 in Table 1) restrict the scope of the regulatory law that can be formulated within the nature conservation sector. Other sectors are not within this scope and decide by themselves about the introduction of species. Here the influence of the policy sectors is very clear. There is also an influence in the multi-level dimension (no. 1), but more indirectly. The hampering of the application of regulatory law occurs via the sub-national level of the *Bundesländer*, where the influence of the agriculture sector is usually very high. The problem structure provides another argument for the substitution choice (no. 5). It belongs to the political problem structure whereby it is difficult to enforce regulatory instruments if scientific uncertainty is high and the regulation serves only the preventive function of avoiding harm. Even if there are substantially good reasons for the regulation, the actors who are not interested can easily hinder it. The rule of the policy sectors in these processes is evident. The selective policy integration strategy of administrative actors (no. 8) includes the formulation of all possible instruments according to policy windows. First they tried to improve regulatory instruments but succeeded only in the competence realm of the environmental sector. The selective policy strategy failed when strong user-sector interests were concerned. From this point of view, voluntary agreements also appear to be substitute solutions.

Three arguments explain voluntary agreements as first choice, one of these as priority measures against regulatory instruments (no. 4). The national and sub-national discourses within the respective strategies on biodiversity that declare voluntary instru-

ments to be instruments of first choice argue that state intervention should be kept as low as possible, preserving peoples liberty. These discourses are partly cross-sectoral, allowing the land-use-sectors to introduce their influence in the discourse. Two arguments regard voluntary agreements as supplements to regulatory law. In international discourses (no. 3) it is recommended to have strong regulatory instruments that are nevertheless supplemented by voluntary agreements as an additional support. These discourses are strongly influenced by actors of the nature conservation sector. Another argument is rooted in the problem structure (no. 6). Trade activities in particular, and the problem-causing behaviour of individuals who are not informed about consequences, are very difficult for the state to control. Voluntary agreements, combined with information measures promise to be more effective. The effect would increase if the cooperative and informational instruments supplemented regulatory law in persuading people to change their behaviour. In practice, however, the supplementary character is weak due to the lack of strong regulatory instruments. In this case voluntary agreements tend to be substitutes.

One argument would support no substantial or symbolic policy-making activities in this field (No. 7 in Table 1). The symbolic means available to the National Strategy on Biodiversity would have allowed actors to stay inactive, supported by the limited resources that were already invested in the formulation of the strategy. Due to the cross-sectoral approach of the strategy, the influences of policy sector relations are manifold, including possibilities for blockades.

Summing up the influence of the involvement of several policy sectors, six of the eight arguments are specified in this respect, among them the four arguments that show evidence for an escape choice. Two arguments don't provide a specification by policy sectors.

6 Conclusions

The analysis shows that the choice in favour of voluntary instruments is not based on one reason only, but can be explained by a complex of factors that influence decision-making. The theoretical framework applied has proven beneficial in finding the explaining factors.

Governments and industry prefer self-regulation. The national biodiversity strategy does not address new regulatory instruments but focuses on voluntary instruments. The government pronounces voluntary instruments to be a suitable approach that offers self-regulation as an efficient and adequate way to prevent the introduction of invasive species.

Actors in the nature conservation sector made some efforts to improve regulatory instruments. Their success was limited to the coverage of their sectoral competences, and even there, one could observe successful influence of other sector activities. The competences and influences of other sectors, as well as multi-level related constraints, hampered the efforts to strengthen regulatory instruments.

At the point where the improvement of nature conservation regulations fail and the competence realm of other sectors gains power, voluntary measures are chosen. They appear as substitutes to regulatory instruments that were hampered for institutional reasons.

Summarising, we conclude that there is only weak evidence for voluntary instruments as being the first choice for nature conservation actors. They would have preferred to strengthen regulatory instruments and their implementation, applying voluntary agreements as supplements. But the environmental sector does not have sufficient competences and political power to enforce all regulatory instruments. Therefore, voluntary agreements have become part of a selective policy strategy that uses this instrument as “escape strategy” and as a substitute for hierarchical regulation that is politically blocked by powerful land-use and commercial interests. This shows that sectoral constraints affect the choice in favour of voluntary instruments and can partly explain the instrument choice.

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