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Transnational environmental collective action facing implementation constraints – the case of nutrient leakage in the Baltic Sea Action Plan

AQ1 Björn Hassler

AQ2 Södertörn University, Sweden

ABSTRACT

While scholars have showed a long-standing interest for how to design effective environmental treaties and other international agreements, less interest has been paid to implementation phases of these agreements. This article takes the Eutrophication Segment in the Baltic Sea Action Plan as an example of a regional effort to reduce nutrient leakages, where national reporting of adopted strategies has been a key mechanism to improve implementation effectiveness. It is shown that although transnational collective action theory is a powerful tool to analyse underlying drivers and priorities in state implementation policies, a deeper analysis of domestic and external constraints can shed additional light on observed implementation gaps. Varying views among countries on, for example, the role of stakeholder participation, legitimacy and top-down governing versus multi-stakeholder governance approaches may comprise domestic constraints that make effective and efficient implementation problematic. In terms of external constraints, states' balancing of action plan objectives versus other international commitments, such as other environmental treaties and EU Directives, is shown to potentially reduce implementation efficiency as well.

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Introduction

Considerable research efforts have been invested in how to theoretically design effective environmental treaties and other international agreements. In the literature on transnational collective action, as well as in rationalist approaches in International Relations more broadly, substantial knowledge has been accumulated on how to design clever treaties that provide individual countries with incentives to cooperate, despite lingering temptations to free-ride or in other ways succumb to collective action dilemmas. In fact, leading scholars in this field argue that collaborative arrangements that do not make each country better off from adopting a cooperative strategy will be futile and most likely fail (Ahlvik & Pavlova, 2013; Barrett, 2012). However, less attention is often given to what happens after the agreements have been signed and ratified. This is surprising, since arguably, a treaty's value is eventually determined by how effectively it was implemented; how it affected outcomes that would not have come about without the treaty (Stokke, 2012).

Implementation of hard and soft law is often patchy and partial, leading to less impressive environmental improvements than expected (Karlsson-Vinkhuyzen, 2011; Mitchell, 2003). Implementation deficits tend to emerge over time, when countries not fully honour entered agreements. In the words of EU Commissioner on Environment, Maritime Affairs and Fisheries, Mr Karmenu Vella, 'We discuss and commit, but when it comes to implementation, we deliver less', when discussing Baltic Sea eutrophication in a recent HELCOM (Helsinki Commission) Ministerial debate (Vella, 2016, May 18). Despite substantial inputs from scholars on how to, for example, design agreements that make all participating states better off, promote implementation efficiency, include mechanisms for monitoring free-riding and provide of support to less affluent countries

(Barrett, 2012), transnational collective action theory tends to be overly optimistic when compared to observed outcomes.

Building on the insight that clever treaty design, although vital, does not guarantee effective implementation and that the design of an agreement and its implementation may not be possible to compartmentalise (Haigh, 2015), increased attention is now being placed on how adopted agreements are implemented within nations (Michaelowa, 2015; Schelling, 2002). This line of research has been accentuated by the increasing number of environmental strategies, action plans and other initiatives primarily aimed at complementing and concretising existing environmental treaties, conventions and EU Directives. It is often difficult to effectively implement such strategies and action plans, since a reduction of large-scale pollution tends to be complex, context-dependent and requiring a mix of different measures. Therefore, analyses of national implementation efforts have become increasingly important for assessing compliance as well as for identification of weaknesses in treaty design (Karlsson-Vinkhuyzen, 2011).

This article examines the implementation of the HELCOM BSAP (Baltic Sea Action Plan), or more precisely, nutrient leakage (the Eutrophication Segment; ES), as an example of a regional environmental strategy where mandatory reporting of mitigation strategies has been made integral parts of the agreement. The focus is placed on how this reporting can shed light on the implementation of the BSAP, using transnational collective action theory as a point of departure. The major objective is to analyse to what extent national implementation strategies can be understood using the tools of this theory, and to what extent other factors or conditions can be traced in the programmes that may threaten implementation efficiency. From a broader perspective, this undertaking exemplify how an analysis of empirical reporting mechanisms can contribute to a richer understanding of how implementation of international agreements may play out, than if focus is exclusively placed on underlying incentive structures. Thus, the point of departure is that while mapping of underlying incentive structures as captured in transnational collective action theory is central to the understanding of implementation effectiveness, various domestic and external constraints can still make implementation patchy and partial.

The BSAP ES case has been selected for several reasons, emphasising the relevance of the problem (*salience*), distribution of costs and benefits from implementation (*incentives*), varying national socioeconomic and political contexts (*diversity*) and broader applicability of results (*implications*).

Salience. Eutrophication is perceived as probably the most severe ecological threat to the Baltic Sea, causing environmental disturbances such as anoxia or hypoxia on sea floors ('dead zones') and widespread algal (cyanobacteria) blooms (HELCOM, 2014; Tynkkynen, Schönach, Pihlajamäki, & Nechiporuk, 2014). In addition, considerable economic, social and cultural values are at risk, threatening traditional livelihoods and recreation values. Thus, governments of the Baltic Sea countries have prioritised measures to reduce eutrophication. *Incentives.* Distributions of costs and benefits from mitigation are highly unequal, which generate collective action implementation challenges (Ahtiainen et al., 2012; Hyytiäinen & Ahlvik, 2015). This diverse distribution of net benefits may invite free-riding, but also provide incentives for flexible cost-sharing. *Diversity.* The littoral States represent a significant diversity in terms of national administrative capacity, traditions and available resources. **Together with the uneven distribution of net benefits, this makes concerted action challenging and can make transfer of knowledge, social learning, side-payments and other measures important mechanisms**

AQ4 to improve implementation efficiency. *Implications.* Advanced and multi-layered governance structures have been in place for a long time in this region. The Baltic Sea has been described as one of the most efficiently governed regional seas, with a pioneering regional governmental organisation, the Helsinki Commission (HELCOM), which was established in the early 1970s (Hassler, Boström, & Grönholm, 2013; Hassler, 2003b). Therefore, lessons from governance strategies tried out in this region may be important for governance of other regional seas as well.

The article will proceed as follows: transnational collective action theory on how states' incentives to invest in mitigation may depend on distribution of costs and benefits is elaborated. The main objective is to provide a conceptual background emphasising how state interests may reflect underlying drivers and priorities. A brief background is then given on the role of HELCOM in protecting the Baltic Sea environment in general and overseeing the implementation of BSAP ES in particular. The National Implementation Programmes (NIPs) are then analysed with focus placed on how member states portray their implementation strategies. This analysis

is carried out using transnational collective action theory as a provider of a general, interest-based analytical perspective. To capture less apparent constraints for efficient implementation, an inductive element is infused into the methodology, where indicators of such constraints are identified. Thereafter, country profiles are constructed and sub-groups of countries identified, as a means to delineate differences and similarities among country strategies. Finally, tentative conclusions are drawn and reflections upon mechanisms that may influence implementation effectiveness and enrich theory more broadly are discussed.

Theory

Collective action challenges

This section elaborates on how transnational collective action theory can be used to capture the role of varying incentives among states in implementing environmental action plans. The main argument put forward is that the larger incongruities in net benefits from cooperation are among countries, the more demanding institutional design will be. When negative net benefits are expected by one or several countries, side-payments and active management of free-riding temptations are typically necessary to improve efficiency.

It has been argued by scholars in transnational collective action theory that distributions of costs and benefits substantially influence incentives for cooperation among countries sharing a joint resource or an environmental management problem (Sandler, 2004; Stokke, 2012). The *malignancy* of a particular collective issue refers to tensions between national priorities and joint concerns. This malignancy has in many cases been detrimental to effective transnational cooperation (Stokke, 2012). A malign issue refers to a situation in which the costs borne by the individual state are large in relation to expected benefits (Stokke, 2012). In terms of mitigating Baltic Sea eutrophication, this situation can translate into circumstances in which some countries face large investment costs, while expected benefits are limited, while others face relatively limited costs, but substantial benefits. This incongruity between who benefits and who pays (Ostrom, 1990) tends to weaken incentives to sign comprehensive agreements and if they are signed, implementation may be only patchy and partial.

Joint products and aggregation technologies

One approach to capture the problem of malignancy is to use the concept of *joint products*, in which benefits from a good, or effects from pollution, are partly private and partly collective (Cornes & Sandler, 1984; Sandler, 2004).¹ As a rule, incentives within states to take action increase with the size of the private component, whereas temptations to free-ride increase with the size of the collective component. A precise game can be constructed based on how reduced pollution is likely to benefit different states, identifying possible equilibria (Morrow, 1994). However, although complicating factors such as uncertainties, information shortages and bounded rationality can be modelled (Morrow, 1994; Simon, 1991), empirical validity is often hard to ascertain (Green & Shapiro, 1994).

Looking at the demand side of transnational cooperation (Victor, 2006), *aggregation technology* (how individual contributions of a particular good add up to a collective good) can be used to assess expected joint benefits (Holzinger, 2001). Since mitigation benefits from reduced eutrophication can be characterised as a joint product, part of the gain from one country's reductions will benefit others. In such a *weighted sum aggregation technology* setting, a state must consider not only costs and benefits from its own mitigation but also the cumulative effect from others' efforts, as well as its own impact on others (Sandler, 2004). Thus, aggregate regional benefits can be expected to be greater than the sum of private gains, which, in turn, creates a rationale for establishing joint plans such as the BSAP.

It is a rather complicated issue how temptations to free-ride interact with gains from cooperation (Sandler, 2004). On the one hand, demand for cooperation typically increases with larger expected gains, but on the other hand temptations to free-ride also increase, because gains from not having to carry the costs will likewise be larger. It can be expected, though, that the larger the potential gains are, the more emphatically countries

will defend the agreement, especially by those expecting the largest net gains, while the more collective benefits are, the larger the threat of free-riding looms.

Groups size and diversity among actors

While malignancy and aggregation technologies refer to characteristics endogenous to the collective good, factors more closely connected to the involved states can be of significant importance. In his seminal work, *The logic of collective action* (Olson, 1965), Mancur Olson suggested that numbers matter. In general, collective action is more difficult in larger groups, primarily because sharing of costs and benefits then tends to be more complicated. Moreover, transaction costs often increase with numbers. Although the transaction cost motivation could be questioned, there seems to be an agreement among scholars that collective action under most real-world circumstances tends to be more difficult as group size increases (Sandler, 2015). However, this conclusion depends upon relevant aggregation technology (Kahler, 1992). When collective benefits are additive, more actors joining and honouring an agreement increases the benefit to each actor, such as when investments in reduced nutrient leakage in one country result in positive spill-over effects in other countries. This tendency does not change the incentives facing the individual actor to invest, but may induce attempts to convince others to contribute more.

Factors such as heterogeneity in group composition, endowment properties and the so-called *exploitation hypothesis* often influence expected degrees of collaboration (Olson, 1965; Sandler, 2004, 2015). Although cooperation among equals, or near-equals, may be easier to form, differences between countries can open up for mutually beneficial ‘trade’ and cost-sharing schemes. For example, differences in terms of expected benefits due to factors such as varying coast lengths and valuable archipelagos can create incentives for countries to offer side-payments to those expecting less gain, to induce them to do more (Hassler, 2008). This situation may, in turn, give rise to strategic incentives to hide true preferences. Varying affluence among countries is often especially important in relation to transnational collective action, because richer countries typically are expected to invest more in resource management. Particularly in cases in which affluence is combined with strong concerns, less well-off and interested countries can piggyback on the former, thus being able to ‘exploit the rich’ (Sandler, 2015).²

Implications

Drawing on these aspects of transnational collective action theory, the following factors can be assumed to be especially relevant in relation to implementing the BSAP ES. Despite the norm and formal inclusion of the Polluter Pays Principle in BSAP, unproblematic, complete and effective implementation is not to be expected under malign conditions. Because of substantial collective components in the joint product of eutrophication mitigation, countries that stand to benefit most can be assumed to strategically emphasise collective aspects in order to foster stricter implementation by others. Somewhat paradoxically, states that stand to gain less from strict implementation may also emphasise collective good aspects, in order to induce provision of support from the others. Proactive countries’ argumentation for shared responsibility may thus backfire, providing less interested states with good reasons for requesting support.

From a transnational collective action theory perspective, it is likely that the existence of substantial net aggregate benefits together with varying national net benefits leads to the proposal of cost-sharing schemes. The rationale of such schemes is twofold. First, side-payments to those who expect net losses are needed to induce adequate implementation. Second, overall effectiveness requires that investments are made where marginal costs are lowest. Thus, in order to pick low-hanging fruit in countries where costs are low, resources need to be funnelled from high-cost to low-cost countries until marginal costs are equalled.

It is likely that national interests and political considerations, for example not being transparent in revealing true preferences, interfere with how cost-sharing schemes are designed. Olsson’s exploitation hypothesis can here be of relevance along the lines described above. Finally, the assumption that cooperation tends to work better in smaller groups can be important. Apart from the observation that regional plans tend to be less

complex than global initiatives, reducing group size can be taken a step longer. Thus, a reasonable assumption from the theoretical perspective adopted here is that attempts to set up sub-groups dealing with, for example, joint initiatives in Baltic Sea sub-basins are likely to emerge.

In the following section, the national strategies for the implementation of the BSAP ES as portrayed in the NIPs are analysed. The main objective has been to inductively, but using a transnational collective action theoretical perspective, identify aspects in the NIPs representing factors and conditions that may influence implementation efficiency. The major reason why a theoretically guided explorative and inductive methodology rather than hypothesis testing was chosen was to allow for identification of complicating factors not directly related to transnational collective action theory. While the underlying national incentive structures emphasised in this theory provides a rough sketch of what to expect in terms of implementation efforts, a complementary analysis of varying domestic political and administrative conditions can contribute to a richer understanding of observed implementation strategies.

Analysing national implementation strategies

Background

HELCOM was established in 1974, and the Helsinki Convention was signed by all Baltic Sea countries (entered into force in 1980). It was the first comprehensive regional marine environmental convention and was soon followed by the UNEP Regional Seas Programme (Kuokkanen, 2002). With the collapse of the Soviet Union and the re-establishment of sovereignty of the Baltic States and Poland in the early 1990s, opportunities for regional cooperation improved dramatically (Hassler, 2003a). The Helsinki Convention was revised and a comprehensive action plan, including financing mechanisms, was drafted in the early 1990s. Moreover, bilateral environmental support efforts were established between the Scandinavian countries and Germany on the one hand and the newly independent countries in the southeast of the Baltic Sea on the other hand (Hassler, 2003a). The revised 1992 treaty addressed marine as well as land-based pollution sources. Over time, eutrophication became a central issue of concern for HELCOM.

In 2007, a new regional action plan – the BSAP – was agreed upon. It encompasses four different segments: eutrophication, hazardous substances, biodiversity and nature conservation and maritime activities, together with sections on Assessment and Tools, Awareness raising and Financing (HELCOM, 2007). The Polluter Pays Principle and the Ecosystem Approach to Management are the primary guiding principles and the aim was set to reach Good Environmental and Ecological Status in 2021. According to BSAP, action should have been started to reach these targets no later than 2016. The statements that ‘... management decisions are based on sub-regional targets’ and that ‘... [nutrient] reductions shall be fairly shared by all Baltic Sea countries’ are especially important in relation to Baltic Sea eutrophication because conditions in different sub-regions differ dramatically and because ‘fairly’ could be interpreted in quite different ways.

In contrast with earlier agreements, which were based on identification of Hot Spots (first HELCOM action plan; 2003 JCP) or an overall reduction goal of nutrients and hazardous substances by 50% (1988 Joint Ministerial Meeting), BSAP is based on ecological objectives. In the ES, five objectives were established (BSAP, 2013: 7):

- Concentration of nutrients close to natural levels
- Clear water
- Natural levels of algal blooms
- Natural distribution and occurrence of plants and animals
- Natural oxygen levels

Using the 1997–2003 period as the baseline, country-specific reductions were calculated in 2007.³ Because of the large differences in nutrient leakage among the Baltic Sea countries, the reductions agreed upon vary considerably as do expected costs for reaching national targets. Recent estimates conclude, for example, that Russia

and Poland together must cover more than 66% of total costs for reaching agreed upon commitments (Hyytiäinen & Ahlvik, 2015).⁴ Substantial efficiency gains from flexible cost-sharing mechanisms have been shown to exist, mainly due to varying marginal abatement costs in different countries. This means that if investments are made where net marginal costs are lowest, implementation efficiency will be substantially improved. However, such schemes typically require transfer of payments between countries, something that often is politically difficult to arrange (Hassler, 2003a). An additional complicating factor is that estimates of public Willingness to pay for these investments have been shown to be about eight times lower in Russia and Poland, compared with Sweden and almost four times lower than in Finland (Ahtiainen et al., 2012).⁵ These large differences between costs and willingness to pay for investments at the national level can be expected to create tensions in joint implementation efforts, which, in turn, makes it reasonable to characterise the ES case as *malign* issue in the theoretical sense discussed in Section 2.

Despite the HELCOM call for collaboration and fairness in the Preamble and the fact that reduction costs differ significantly among the Baltic Sea countries, BSAP is almost exclusively based on national implementation and the Polluter Pays Principle. In order to coordinate and stimulate national efforts, it was decided that all Contracting Parties were to hand in NIPs no later than 2010. However, no precise guidelines on how to structure these reports were established, which led to a considerable degree of diversity in the design of the reports.

National interests and implementation tensions: identification of themes in the NIPs⁶

The BSAP NIPs have been thoroughly examined in two stages in search of dominant themes. It should be emphasised that the undertaken analysis could only address what has been referred to in the reports. To what extent these statements resonate with actual undertakings is beyond the scope of this analysis. Instead, the focus is placed on how countries have chosen to portray their respective implementation strategies. The documents were first carefully read and notes were taken on recurring aspects without – as far as possible – referring to neither the theoretical perspective of transnational collective theory, nor possible links between issues brought up in reports indicating systematic strategies or objectives. The identified aspects arrived at where then tentatively grouped according to if they, for example, primarily referred to domestic governance constraints in relation to implementation efforts, emphasis given to transnational collaboration, expectations of support or concrete means to facilitate reaching of mitigation targets.

After this grouping of recurring aspects, a second careful read-through was undertaken, where the main ambition was to relate the previously identified aspects to transnational collective action theory, identifying possible links between those and underlying national incentives, and to tease out if other overarching themes could be found. Careful notes were taken during this process on how themes could be constructed based on previously identified aspects. In some cases, it was difficult to unequivocally categorise the observed aspects into themes, but three themes nevertheless emerged quite clearly: *underlying incentives and drivers*, *domestic constraints* and *external constraints*. When identified aspects were hard to categorise because of complex and uncertain underpinnings or rationales, the dominating characteristics together with an appraisal of the context where the aspect was referred to were used to further validate the categorisation.

The *underlying incentive structures* theme refers directly to transnational collective action theory, where it could be argued that aspects brought up resonate with what would have been expected from theory. The fundamental underlying driver is here promotion of state interests, but also strategies to, for example, curb other states' free-riding. In contrast, *domestic constraints* concerns aspects brought up in the NIPs that primarily refer to domestic conditions and contingencies that may influence implementation efficiency. The focus is here placed on structure rather than agency, such as jurisdictional and administrative arrangements, resource shortages and legitimacy. The *external constraints* theme similarly captures structure rather than agency, structures that – at least in the short run – are difficult to change. These structures are often related to how international soft or hard law, such as other treaties and agreements, EU Directives, norms and interaction with other foreign policy objectives, may influence the implementation of BSAP. In the following section, the aspects identified in the NIPs, and how they relate to the respective themes, are described in more detail.

Theme 1: underlying incentives and drivers

Flexible cost-sharing is a scheme in line with transnational collective action theory built on the suggestion that when costs and benefits from improving a perfect or partial (joint product) collective good are unevenly distributed, side-payments – however operationalised – can lead to Pareto improvements (at least one actor is made better off, no one is made worse off). Surprisingly, such schemes are not discussed at all in the Danish and German NIPs, despite the relative high GDPs in these countries and legacies of environmental concern which could render such schemes attractive. In contrast, flexible cost-sharing is discussed at length in the Swedish report, possibly indicating a difference in priority setting between on the one hand Denmark and Germany, and on the other hand Sweden. The Estonian call for additional funding from the EU in the form of projects may be in line with theoretical expectations, but the lack of discussions on similar topics in the NIPs of Latvia and Lithuania casts some doubt on such an interpretation. The explicit expectations of financial support from external sources in the Russian report resonates well with theory, since assumed negative national cost-benefit ratios suggest that side-payments could be reasonable. Detailed cost estimates for investments in WWTPs are given in the Russian report, noting that national funding in most cases is incomplete. In the Polish NIP, it is concluded that because precise cost estimates are lacking, detailed financing alternatives cannot be elaborated, but the impression is that external support in one form or another probably is needed. Systematic schemes of cost-sharing aimed at minimising total costs, rather than assuming PPP, are not referred to in any report.

Cooperation in other forms than explicit cost-sharing schemes could have been expected from a transnational collective action point of view, where resourceful countries with strong priorities for effective implementation try to induce others to do more. Indeed, cooperation is directly or indirectly referred to in all NIPs, but from quite different perspectives. In the Danish report, only domestic cooperation between public authorities at different administrative levels is described. In contrast, Lithuania and, even more so, Sweden emphasise the importance of transnational cooperation. Sweden especially stresses that all countries must contribute to the common goal of a less eutrophicated Baltic Sea. Given the relatively high Willingness to pay and limited national costs for implementing national commitments in Sweden, the Swedish position is in line with theoretical expectations.

Closely related to regional cooperation, issues linked to national focus/collective responsibility are brought up in all NIPs but are usually referred to from national perspectives. Only Sweden underlines that a regional perspective is needed to fulfil BSAP ES requirements, but there is no concrete discussion of how to enhance collective action. Collective goods related to ecosystem services are not explicitly discussed in any of the reports. National perspectives dominate almost completely, in which Finland and Sweden especially emphasise values related to their archipelagos. The other countries stress national interests/commitments roughly in line with PPP. Latvia emphasises the importance of cooperative attitudes 'from others' with respect to transboundary riverine loads. In the German NIP, it is noted that the protection of the Wadden Sea (the classification of the whole of Germany as a nitrogen-sensitive area and good farming practices) implies that German key obligations on nutrient leakage to the Baltic Sea are fulfilled almost automatically. While the national interests frequently brought up clearly resonate with theoretical expectations, the limited efforts by proactive countries to underline joint responsibilities are somewhat unexpected. A possible interpretation could be that emphasising joint responsibilities has not been seen as an effective argumentation to instil effective implementation, but it could also be the case that benefits from reduced nutrient leakage have considerable private components.

From a strategic collective action perspective where free-riding is often a key concern, proactive countries can be assumed to emphasise their own achievements in order to reduce others' expectations. On the other hand, countries with lower capacity or expected net benefits from successful implementation could be assumed to emphasise future needs, rather than prior achievements. These expectations are confirmed. Sweden, Finland, Denmark and Germany are all emphasising prior achievements in their respective NIPs, whereas Russia emphasises the poor state of many of its wastewater treatment plants (WWTPs), while Latvia stresses that substantial parts of its leakage originate from up-stream countries. Sweden, Finland, Denmark and Germany argue that due to investments in WWTPs before 2007, less must be done in the years ahead. It is furthermore stressed by these countries that national plans often are stricter than BSAP requirements, which makes collaboration less

relevant. In contrast, Russia describes its large investment needs in WWTPs in detail, at the same time underlining limited internal funding possibilities. Russia, and to some extent Poland, emphasises its poor standard of manure handling and management of other major emission sources, together with problematic funding of needed upgrades. Latvia states that no significant measures in this area have been undertaken, but underlines the importance of project-based EU cooperation.

Concrete implementation plans can be important tools to signal commitment and credibility in transnational collection action settings. However, only the Swedish report describes national implementation efforts in detail. Pilot projects and test sites are referred to as examples of possibilities to reduce nutrient run-offs in agriculture and to reduce emissions from other sectors. Moreover, estimates of reduction potentials in different areas are elaborated. Denmark's report is not particularly concrete, but offers elaboration on total size of planned wetlands, buffer zones and other means to reduce agricultural run-offs. In similar ways, wetlands are briefly discussed in the German NIP. Russia suggests improvements in quite concrete ways, which may signal commitment and credibility, provided **that** external support is forthcoming.

Summing up on aspects directly related to underlying incentives as captured in transnational collective action theory, it seems clear that such incentives do influence how implementation strategies have been portrayed in the NIPs. Generally, countries that can be assumed to benefit most from a successful implementation of BSAP ES have taken more proactive stances compared with countries facing higher net costs. However, despite the theoretical expectations in favour of flexible cost-sharing schemes or other types of side-payments in order to reach Pareto improvements, surprisingly few such suggestions are made in the NIPs. In order to enrich the understanding of possible implementation barriers, the interests is now turned to aspects that may be less related, at least directly, to transnational collective action incentive patterns and more to domestic and external constraints.

Theme II: domestic constraints

In order to foster effective transnational cooperation, an argument can be made that similar views on how to promote effective coordination facilitate joint implementation. However, despite the contemporary *governance* discourse on stakeholder inclusion as a powerful tool to ensure legitimacy and effective implementation (Gilek, Linke, Karlsson, & Smolarz, 2016), only Denmark and Sweden touch upon how to achieve these goals. Denmark emphasises that anchoring BSAP targets and processes within the different layers of administration is important in relation to implementation effectiveness and efficiency, whereas public hearings may improve external legitimacy. A similar perspective is adopted in the Swedish NIP, in which the role of stakeholder participation is underlined. However, in contrast with the Danish NIP, in which the implementation phase is placed in focus, inclusion of stakeholder perspectives in preparatory stages is also emphasised in the Swedish report. Quite a different perspective on legitimacy and stakeholder participation can be discerned in the Estonian, German and Russian NIPs. More of a top-down *governing* view is adopted here, in which expert-led training of practitioners and local authorities, rather than stakeholder participation on more equal terms, is envisioned. For example, the Russian report recommends translation of HELCOM publications into Russian as a good means to inform people and local authorities. Thus, views on governance versus governing in relation to effective implementation vary considerably between the countries, which may impede mutual understanding and effective coordination.

An analogous argument can be made on the role of compatible views among collaborating countries on key policy tools. Despite economic incentives such as environmental taxes, subsidies, agro-environmental schemes and payment for agricultural services being integral parts of most contemporary environmental governance systems (Gilek & Kern, 2015), it is not much elaborated in the NIPs how such mechanisms will be used to reduce nutrient leakage or to address incongruities between costs and benefits. Only the Swedish plan explicitly refers to the use of environmental taxes to reduce leakages, despite the important roles this instrument to influence incentives play in most countries. Examining domestic strategies as outlined in the NIPs, PPP plays a limited role. Instead, subsidies to stimulate less leakage-prone production modes are emphasised in the reports of Finland, Germany and Sweden, but not in the others. Thus, domestic views on how to ensure effective

implementation of the BSAP ES commitments differ noticeably, possibly making adoption of, for example, flexible cost-sharing schemes cumbersome.

Another possible domestic constraint to effective implementation emerging from the analysis of the NIPs concerns national administrative and jurisdictional institutions. Although most transnational agreements have to be nationally domesticated to become effective, variation in how this is undertaken in different countries can make transnational coordination challenging. National legislation, planning and targets deemed relevant for nutrient leakage management are referred to in all NIPs, but particularly so in the German, Swedish and Russian reports. In Russia, the Baltic States and Poland, significant emphasis is placed on national laws/decrees and how responsibility for implementation should be distributed among ministerial and administrative bodies. These characteristics are described in technical terms, possibly reflecting a tension between federal, national and regional administrative requirements and traditions on the one hand and adherence to contemporary Western governance modes on the other hand. In contrast, the Helsinki Convention or HELCOM Recommendations are almost not mentioned at all in any of the reports, possibly indicating difficulties in reconciling domestic conditions and institutions with regional coordination needs.

Knowledge production plays an important role in how to improve transnational collective action on eutrophication. Thus, strategies to improve scientific knowledge on how different types of leakages eventually influence oxygen concentrations and algae blooms and to integrate practitioner knowledge into the NIPs can be assumed to be important. However, strategies for such knowledge generation are only mentioned in three of the nine NIPs (Estonia, Germany and Sweden). Improved cost estimates are asked for in the Polish report, whereas Latvia places most emphasis on the need for better data on transnational riverine flows. Moreover, strategies to coordinate knowledge production and dissemination are not mentioned at all in any of the reports. Thus, domestic bodies assigned responsibility for such coordination, and the roles of such bodies, are not elaborated upon in the NIPs, which can be seen as a domestic constraint in relation to efficient and region-wide implementation of the BSAP.

In a similar vein, the fact that little is said in the reports about expected difficulties in fulfilling national commitments may hamper effective coordination because this could imply that lessons learned in domestic settings may not be effectively disseminated throughout the region. Although governments, according to theory, are assumed to carefully consider strategic impacts from disseminating national policy priorities, this does not seem likely to be the major problem, but rather inadequate institutionalisation of collective learning from experiences. Russia and Poland make sweeping statements on changes in pollution due to societal change, Sweden expects problems in Kattegat, whereas Latvia discusses expected difficulties in persuading neighbouring countries to reduce upstream river leakages. Germany simply argues that it will not be technically possible to improve existing WWTPs.

Summing up on possible domestic constraints for effective implementation strategies as portrayed in the NIPs, it seems quite clear that the varying political and administrative modes in the riparian states can make effective coordination of policies challenging. Whereas contemporary administrative cultures in Sweden, Finland, Denmark and Germany emphasise governance mechanisms such as stakeholder participation and the ecosystem approach, Russia, but also the Baltic States and Poland, represent more traditional top-down governing styles, without much focus placed on other actors than state authorities. Thus, even though transnational collective action theory suggests a clear case for closer coordination and burden-sharing, this can be easier said than done, especially as national policy-making and administration tends to be 'sticky' and not prone to quick changes (Hassler, Boström, & Grönholm, 2013). These domestic constraints to effective implementation are likely to be exacerbated by inadequate institutional structures for knowledge-sharing and learning from undertaken mitigation efforts.

Theme III: external constraints

The BSAP was explicitly designed to fit existing and relevant international agreements, mainly EU Directives such as the Marine Strategy Framework Directive, the Water Directive and the Nitrates Directive, the Helsinki Convention and HELCOM Recommendations (Hassler, Boström, & Grönholm, 2013). However, this

coordination almost exclusively concerns the agreement as such, not its implementation. In similarity with EU Directives, BSAP objectives are goal- rather than process-oriented, which means that when coordination among the parties is needed, this has to be designed and organised ad hoc. The instrument of Ministerial conferences every third year or so is hardly sufficient to pave the way for efficient implementation.

Despite being a centrepiece of BSAP, the Ecosystem Approach to Management (EAM) is hardly mentioned at all in the NIPs. This is surprising, given the prominent position of EAM in most contemporary transnational marine governance frameworks (Boström, Grönholm, & Hassler, 2016), and because not only BSAP, but binding EU Directives (which apply for all HELCOM members States except Russia) as well, place few constraints on *how* the BSAP targets will be reached and thus on the implementation of the plan. Undoubtedly, effectively adopting EAM in implementing BSAP will require closer coordination in order not only to reach basin-wide reduction goals but also sub-regional targets. How this closer coordination will be achieved is not elaborated in any of NIPs.

EU Directives furthermore place external constraints on the implementation of the BSAP from the perspective of how the EU Baltic Sea member states prioritise between EU Directives and BSAP commitments. Even though the *goals* of BSAP and relevant EU Directives have been harmonised, chosen national *implementation strategies* may vary, on, for example, the need for regional coordination. Instead, the domestication of the directives without much reference to BSAP targets is placed in focus. In all plans, except those of Russia and Finland, considerable weight is given to the role of EU Directives in reducing nutrient leakage. In the German report, the importance of complying with relevant Directives is stressed, whereas potential funding and cooperation in EU projects is accentuated in the reports from the Baltic States, Poland and Russia. Finland and Russia moreover stress the significance of bilateral cooperation in the Gulf of Finland, for example on the St. Petersburg WWTP.

Summing up on external constraints, the pictures portrayed in the NIPs indicate that although BSAP targets and objectives in relevant EU Directives have been rather tightly harmonised, prioritising between implementation efforts can be quite complex in these different institutional settings. Because of the binding nature of EU Directives and stricter monitoring of goal achievement, implementation of measures within the specific realm of BSAP seem to risk being crowded out by EU Directives.

In the following section, the focus will be placed on whether groups of countries that share characteristics of importance to the implementation of the BSAP ES can be identified. This is of considerable relevance not only to the practical implementation of the plan, but to transnational collective action theory as well. Since theory suggests that smaller groups tend to cooperate more efficiently than larger ones, it is of relevance to analyse what alternative sub-groups of Baltic Sea countries that may form in relation to BSAP implementation. Moreover, sub-regional groups that are relatively more homogenous compared with the full set of regional states may cooperate more effectively. While theory suggests that state interests, in this case primarily determined by *joint products* and *aggregation technologies* together with GDP elasticities, determines strategies adopted, the account given above deepened the analysis by complementing these incentive structures with possible domestic and external constraints. In fact, if domestic and external constraints alter preferences on group formation based on joint product implications, policy implications on, for example, facilitation of group formation may need to be revised. Moreover, if the constraints are significant, flexible mechanisms making all countries better off may not be sufficient. Other measures than side-payments will then most likely be needed. Furthermore, the *exploitation hypothesis* may have to be qualified based on domestic and external constraints, if not in terms of leadership of the proactive parties, in regard to the selection of appropriate policy tools for exerting regional leadership.

Generation of country profiles

Based on the NIP aspects elaborated above, four condensed profiles comprising one or a few countries that share important features of relevance to the BSAP ES implementation have been identified. Special attention has been given to aspects related to the three themes underlying incentives and drivers, domestic constraints and external constraints. It should be noted that some aspects are not mutually exclusive, but are part of more than one profile. In Table 1, the four profiles are depicted.⁷

Table 1. Typology of countries ordered into groups based on main aspects portrayed in the NIPs.

Profile	Countries	Key characteristics (examples)
Collaboration and support in the shadow of administrative-legalistic legacies	Russia	Expected external support; Tensions between domestic administration and dominating contemporary governance structures
Towards EU integration in the shadow of administrative-legalistic legacies	Estonia, Latvia, Lithuania, Poland	Priority given to implementation of EU Directives rather than to BSAP ES; Tensions between domestic administration and dominating contemporary governance structures
EU Priority One, with confidence	Denmark, Germany	Priority given to implementation of EU Directives rather than BSAP ES; Prior achievements make additional investments less relevant; Governance discourse important
Special interests, confidence and engagement	Finland, Sweden	Focus on biophysical special interests (e.g. archipelagos, long coastlines); Prior achievements make additional investments less relevant; Proactive attitude vis-à-vis regional efforts and responsibilities; Governance discourse important

Collaboration and support in the shadow of administrative-legalistic legacies (Russia)

It is no surprise that Russia ends up in a separate category. Although a Contracting Party to HELCOM, Russia is not a member of the EU. Since EU influences most environmental undertakings in this region, this places Russia in a different position compared with the other Baltic Sea countries. Demand for collaboration and external support is clearly signalled in the precise WWTP investment plans in combination with the emphasis placed on domestic resource shortages. To some extent, this type of signalling can be understood as reflecting tensions in implementation due to high costs in combination with relatively limited benefits. The support can possibly be in the form of EU-sponsored projects or directly from EU funds. Transnational projects based on joint product motivations between, for example, Russia and Finland can also be of relevance because of the specific Gulf of Finland context. Direct collaboration and support between particularly the Scandinavian countries and countries at the south-eastern rim can also be an option, given the history of such plans in the 1990s (Hassler, 2003a).

The substantial emphasis placed on domestic administrative-legalistic aspects may reflect internal tensions in terms of responsibility, power and influence. More space is given to delineating what particular authority is responsible for different parts of the implementation process, than how to facilitate adoption of key BSAP implementation mechanisms.

Towards EU integration in the shadow of administrative-legalistic legacies (Estonia, Latvia, Lithuania and Poland)

The NIPs in this group of countries show significant similarities to the Russian profile concerning legal and administrative traditions. However, in contrast with Russia these countries also emphasise the importance of complying with EU Directives. Because of their EU membership, it was necessary to overhaul historic regulatory structures and it has been important to build trust in compliance with domesticated Directives and in adapting to EU discourses on contemporary environmental governance. Being effective in building such trust might prove instrumental in attracting additional EU funding to reduce eutrophication.

It is striking in this group of countries comprising Estonia, Latvia, Lithuania and Poland that BSAP requirements as such are not addressed, at least not in detail. Tensions between costs and perceived benefits are apparent in the Polish NIP in particular and seem to translate into questions on how to fund WWTP investments in particular. However, the major bundle of aspects emerging out of the NIP analysis is how further EU integration is to be promoted against the background of prior administrative traditions. As far as the NIPs of these countries are concerned, EU integration overshadow BSAP-specific commitments.

EU Priority One, with confidence (Germany and Denmark)

Germany also portrays a picture in which more emphasis is placed on fulfilling EU Directives than on reaching BSAP eutrophication targets. This might not be surprising, given the dominant role of Germany in the EU and its comparably short Baltic Sea coastline. It is furthermore underlined that much of what Germany does in

terms of reducing nutrient leakage, developing Good farming practices and adhering to the status of being classified as a nutrient-sensitive area primarily is aimed at protecting the Wadden Sea rather than the Baltic Sea. The positive effects upon the Baltic Sea are referred to as *positive externalities* rather than prioritised objectives. The importance of having good WWTPs is underlined, as is the high quality and prior build-up of such facilities. Germany really cannot do much more in this area, according to its NIP, and thus signals that EU matters most, that Germany is among the best in class and that BSAP obligations are met as a positive side effect from implementation of EU Directives.

The picture portrayed in the Danish NIP is not as sharp as in Germany's, but its focus on EU Directives and national plans rather than on BSAP targets is notable. Denmark too is signalling confidence, arguing that substantial measures have been undertaken after the baseline period, which implies that less was necessary to do after 2010. Somewhat similar to Germany, Denmark emphasises integration of decision-making and implementation processes in relevant administrative and political layers to promote legitimacy and efficiency.

Special interests, confidence and engagement (Sweden and Finland)

Sweden and Finland have been proactive in the HELCOM process since it was established in 1974. They both emphasise the joint responsibility of all Baltic Sea countries to reduce Baltic Sea eutrophication. However, somewhat paradoxically, they both stress the national interests in protecting national archipelagos. This points in the direction of perceived joint products skewed towards considerable private transnational goods rather than shared, collective interests. The tradition of leisure boating and having a summer house by the sea is portrayed as very specific to these countries. When comparing the Swedish and Finnish NIPs, Sweden shows more of a cross-the-board commitment and thus a more proactive stance. Significant commitment is shown also in the Finnish NIP, but here, more emphasis is placed on Finnish support to, and collaboration with, Russia on WWTP investments in St. Petersburg. The sub-regional level in the Gulf of Finland is thus prioritised, not only by Russia but also by Finland, pointing towards complex perceptions of joint products and limited public support in Russia for further investments in nutrient reduction. Possibly, this may reflect GDP differences between Russia and Finland in combination with high-cost and limited domestic benefits from Russian leakage reduction.

Conclusions

This study departed from the observation that although the design of transnational environmental agreements has become increasingly sophisticated and grounded on empirical data, implementation of these agreements often is patchy and partial. In the case of combating eutrophication in the Baltic Sea, this is surprising, given the convincing argumentation referred to in the first part of this article on substantial, expected regional net benefits from fulfilling the ES agreement in the BSAP. Transnational collective action theory provides a thorough theoretical foundation for elaborating possible ways to address collective action dilemmas, building on the assumption that provision of expected individually calculated net benefits to all countries at the country level is necessary to induce compliance. In cases such as the implementation of the BSAP ES, where distribution of costs and benefits from mitigation are diverse, suggested solutions tend to emphasise flexible cost-sharing schemes aimed at making all countries better off. However, despite the comparably mature institutional structure of Baltic Sea environmental collaboration, good availability of data and expected aggregate net benefits, implementation so far is still patchy and partial. It has been suggested in this article that consideration of both *domestic* and *external constraints* could be important to gain a more comprehensive understanding of implementation deficits.

Domestic constraints refer to differences among the countries in terms of the emphasis given to contemporary governance versus traditional governing approaches. Governance here emphasises stakeholder participation, deliberation and transparency, whereas contrastingly, traditional governing approaches tend to have hierarchical administrative and legalistic regulatory structures. The more collaborative approach of governance is likely to incur higher transaction costs because of increased complexity and time elongation for policy development as more stakeholders, sectors, policy domains and regulatory structures are incorporated into

formation and implementation processes. Although a regional agreement has been reached on national targets, different views on proper implementation strategies make mutual understanding, and thus coordination, cumbersome. Moreover, given that side-payments by necessity imply unequal roles between provider and recipient, finding common views on how to frame nutrient leakage from agriculture may be hard to reach, especially when both parties may have incentives to conceal true preferences in order to improve negotiation positions.

Given that the collective action *exploitation hypothesis* holds, it is reasonable to expect countries that are net beneficiaries from successful implementation to take the lead in the negotiations. To improve negotiation outcomes, it seems sensible for proactive countries to include leadership aspects in their overall implementation strategies. From a broader, transnational collective action point of view, attention may need to be given to diverging domestic conditions, as these may obstruct mutually beneficial outcomes. This could also imply that the theoretical assumption that smaller groups tend to cooperate more efficiently than larger groups may have to be qualified. Transnational collective action theory suggests that countries that benefit may need to compensate those expected to be net losers to such an extent that all become net beneficiaries. While this may be true in a general sense, there is no reason to assume that such a difference between countries' expected outcomes aligns neatly with the same countries with few domestic constraints, that is, for example differently framed implementation strategies and governance versus governing political and administrative cultures. Coincidence may lead to such fortunate outcomes, but it is probably more common that a difference in expected gains from mitigation is paired with differences in domestic constraints. In the sub-groups of countries arrived at in this article, net losers such as Russia and Poland ended up in different profile groups compared with net beneficiaries such as Sweden and Finland, which indicates that domestic constraints in this case may counteract collective incentives to find efficient cost-sharing schemes.

Turning to *external constraints*, it has been shown in this article that compliance with relevant EU Directives was portrayed as a major concern in especially the Baltic States, Poland and Germany. This is no surprise, since the EU plays a key role in Baltic Sea environmental governance. It has been an increasingly important task for HELCOM to minimise incompatibilities between the two institutional structures and to continuously search for synergies. However, the analysis of the NIPs indicates that coordination between BSAP and the EU may not be a prioritised objective for all HELCOM member states. Rather, the impression is that EU requirements tend to be prioritised, and that the fulfilment of BSAP ES targets may, or may not, follow as an indirect consequence. Transnational collective action theory suggests that the composition of the *joint product* – in this case, to what extent benefits from eutrophication mitigation are private, and to what extent they are collective – is a key determinant in the formation of state strategies. The fact that the sub-groups of countries arrived at in the analysis tend to comprise groups of neighbouring countries sharing similar traits as portrayed in the NIPs seems to resonate with theory. Unless the joint product is a perfect collective good (no private component), states benefit more from mitigation undertaken in neighbouring states than from those farther away. However, as the coordination between BSAP ES and EU Directives were quite ambivalently portrayed in the NIPs, there are indications that states expect that fulfilment of BSAP commitments have to be balanced against Directive requirements. The Directive requirements are quite differently structured compared with BSAP ES as they do not only concern Baltic Sea conditions. It is not surprising that EU member states have to balance different external constraints, but the point made here is that focussing exclusively on the distribution of costs and benefits from mitigation as the determinant of state priorities can result in a neglect of other factors that may be of considerable importance to all, or some, of the countries involved.

Theoretically, this study has showed that the simplifying assumption of nation states as unitary actors in most contemporary transnational collective action theory (e.g. Barrett, 2012; Sandler, 2015) may need to be relaxed in order to reach a deeper understanding of adopted national strategies. Although states as unitary actors may have incentives to take action based on expected net benefits, collective action dilemmas at domestic levels may result in adopted implementation strategies that are difficult to align with theory using a state unitary actor methodology. Thus, to decrease the gap between theoretically expected outcomes and empirical observations, refined approaches in transnational collective action theory may need to carefully relax the unitary actor assumption, and scrutinise what factors that need to be addressed at especially domestic levels in order to complement existing transnational collective action theory. This case study has shown that factors

such as differences in political-administrative structures and existing domestic governance patterns can influence adopted implementation strategies. But additional research efforts need to be invested in other case studies and subsequent syntheses of those studies, before adequate and precise refinements of theory can be discerned.

From a more practical policy perspective, a possible conclusion based on the results presented in this paper is that getting a joint agreement on national mitigation targets is not the end of a process towards decreased pollution. Rather, already in the early negotiation phases, aspects on how to implement the agreement may need to be brought to the table, as these aspects often influence what type of agreement that will have the highest expected success rate in terms of implementability. The negotiations may thus benefit from including possible cost-sharing schemes as well as likely domestic and external constraints, as well as how to reduce negative influences from those constraints as much as possible. Admittedly, including such complicating factors would most likely make negotiations even more cumbersome. But then again, not including them may lead to a nice agreement, but only patchy and partial implementation.

Notes

1. In line with game theory terminology, a distinction is made between *private* and *collective* goods. Private goods refer to goods exclusively commanded by an individual actor (a person, a company, an organisation, a country or any other type of entity perceived as a single/composite actor), whereas a collective good is jointly controlled by two or more actors.
2. The exploitation hypothesis originates from Olson (1965). Whether the term 'exploitation' adequately portrays situations in which affluent and concerned countries pay more than others can be discussed.
3. These reductions were later revised, in most cases lowered, based on the 2013 BSAP Ministerial meeting (Hyytiäinen & Ahlvik, 2015).
4. According to Hyytiäinen and Ahlvik (2015), estimated costs for reaching national targets for both nitrogen and phosphorous with no cost-sharing are (in million Euro): Poland 776, Russia 536, Finland 158, Estonia 158, Latvia 136, Germany 86, Lithuania 72, Sweden 54 and Denmark 3.
5. According to Ahtiainen et al. (2012), average individual willingness to pay for reaching BSAP ES targets are (2011 Euro, PPP-corrected): Poland 13, Russia 12, Finland 45, Estonia 26, Latvia 6, Germany 26, Lithuania 10, Sweden 83 and Denmark 36.
6. All analysed National Implementation Programmes can be accessed at <http://www.helcom.fi/baltic-sea-action-plan/follow-up/national-implementation-programmes>.
7. It should be noted that to ensure as much compatibility among the identified themes as possible, Theme 1 (underlying incentives and drivers) has only been considered as emerging out of the NIP analysis, and not based on, for example, estimates of national mitigation costs and Willingness to pay for decreased eutrophication.

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