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Implementing the water framework directive in Denmark – Lessons on agricultural measures from a legal and regulatory perspective

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ABSTRACT

One of the major challenges in the implementation of the Water Framework Directive (WFD) is how to address diffuse agricultural pollution of the aquatic environment. In Denmark the implementation of agricultural measures has been fraught with difficulty in the form of delays and legal proceedings, despite an ambitious starting point. Why has the implementation of the WFD been so difficult? Based on an analysis of three core components (effectiveness, scale and legal issues) of three agricultural measures (riparian zones, reduced management of streams and catch crops), the paper argues that the legal and regulatory complexity of adopting mandatory land use related measures at the national level to achieve site-specific environmental objectives was underestimated in a top-down political process. The ambitious mandatory policy measures, which added to existing high regulation pressure, led to regulatory challenges, such as possible violation of private property rights raising questions about the actual environmental effects at local level. Consequently, political acceptability and legitimacy of the agricultural measures were undermined, resulting in a gradual withdrawal of the measures and a policy failure. It is argued that the adoption of more flexible measures to be implemented at the local level could have resulted in fewer difficulties from an economic and legal point of view as measures could have been applied where there was a clear environmental benefit, and possibly also at a lower cost.

1. Introduction

The implementation of the Water Framework Directive (WFD) poses serious challenges in many EU Member States. While all Member States have now adopted River Basin Management Plans (RBMPs), both the third and fourth implementation report of the Commission notes that several Member States have difficulties in delivering details on how the targets will be met (European Commission, 2012a, 2015a). With only 50% of all waterbodies expected to have reached Good Ecological Status by 2015, more needs to be done (European Commission, 2012a). In particular, diffuse pollution from agriculture is identified as a major obstacle for achieving good ecological quality in rivers and coastal waters (EEA, 2015; European Commission, 2012a).

Denmark has also faced major implementation challenges despite a long and fairly successful history of water quality policies and management, relying on more than 30 years of aquatic action plans aimed at reducing, in particular, the level of nutrients, which is the most significant water quality problem in Denmark (Mikkelsen et al., 2009; Kronvang et al., 2008; Børgesen et al., 2009; Dalgaard et al., 2014). The core of these political agreements has been nationwide reduction targets regarding the leaching of nitrogen from primarily agricultural sources, combined with specific measures to achieve the targets (Ærtebjerg et al., 2003). Danish aquatic action plans have resulted in detailed and comprehensive legislation aimed at reducing agricultural nitrogen pollution (Baaner and Anker, 2013). The measures have been effective compared to other EU countries and have resulted in an almost 50% reduction in agricultural nitrogen leaching from the mid 1980s to 2003 (Naturstyrelsen, 2005, 2014a, 2014c). Nevertheless, nitrogen leaching is still a major concern, especially in relation to the water quality of coastal waters (Naturstyrelsen, 2014a).

From the outset, the existing policy and legislation appeared to provide a strong starting point for the implementation of the WFD in Denmark. Indeed, it was politically feasible to set new specific reduction targets mainly for nitrogen, and identify necessary cost-effective measures for reducing the agricultural pollution in the so-called Green Growth Agreement (Regeringen, 2009). However, relying on the existing top-down policy traditions may also have distorted the implementation of the WFD in Denmark.

The result has been long delays, complicated legislative arrangements as well as an increasing dissatisfaction with the Danish approach, leading to several legal proceedings. So, while Denmark may have started out as a “hare” with an ambitious policy for WDF

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implementation (Bourblanc et al., 2013), including additional mandatory agricultural measures and reduction targets, the hare has stumbled in the implementation process and the result has been an almost complete withdrawal of the most important agricultural measures.

The purpose of this paper is to analyse the implementation process looking at three agricultural measures focusing on key elements in the process such as effectiveness, scale and legal aspects. It must, however, be kept in mind that a number of other aspects may have influenced the implementation process, including increasing political opposition towards additional environmental restrictions on agriculture.

Other EU Member States may face similar regulatory challenges in the future, considering the pressure from the Commission to not only address, but also further reduce, e.g. pollution from agriculture in countries such as the Netherlands, Belgium (Flanders), Germany and France (European Commission, 2012a, 2015b). The WFD time scale is ambitious, and the Commission will push for improvement in many member states and there is a risk that some of the measures listed in the RBMPs cannot be implemented in practice due to a lack of political instruments to enforce their implementation (Hering et al., 2010). Thus, the implementation and feasibility of potential policy measures may become a crucial issue in WFD implementation in many Member States, and the Danish experiences may prove useful in a broader setting.

2. Background and analytical framework

Implementation of the WFD has been the subject of several analyses from different theoretical and methodological angles, including legal analyses (e.g. Keesen et al., 2010; Howarth, 2009), policy analyses (e.g. Liefferink et.al., 2011; Uitenboogaart et al., 2009; Bourblanc et.al., 2013) and economic analyses (Jacobsen, 2009; Grinsven et al., 2012). Some articles focus on participation in the process (Hedelin, 2008; et al., 2010; Wright and Jacobsen, 2010; Hogl et al., 2012), looking at issues like the integration of knowledge from all relevant fields of expertise and handling different kinds of uncertainty, while other papers look at institutional interplay (Moss, 2004) or science-policy interplay (Willems and Lange, 2007; Quevauviller et al., 2005). Beunen et al. (2009) examine how legal and procedural aspects of planning and decision making are gaining increasing attention in the implementation process. Other key issues include the balance between regulatory flexibility and enforcement (Green et al., 2013) and the level of ambition in, e.g. the Netherlands (Dieperink et al., 2012) and Germany (Kastens and Newig, 2007). A key point in international literature appears to be the political, economic and legal constraints that may result in the adoption of relatively soft or voluntary measures to address e.g. agricultural pollution. Such measures are, in many cases, unlikely to fulfil the obligations of the WFD.

The Danish experiences are, however, of a different nature, being linked to the adoption of specific reduction targets and mandatory agricultural measures, i.e. a more ambitious approach than in many other Member States. Bourblanc et al. (2013) categorise Denmark as a 'hare' in WFD implementation with reference to Lundquist's use of Aesop's fable about the hare and the tortoise in a comparison of US and Swedish air pollution policy. They explain the Danish approach to WFD implementation partly in terms of the general "law-abiding" character of Danish policy (Falkner et al., 2007) combined with a relatively high degree of (political) visibility and accountability. High ambitions have been the hallmark of Danish water quality policy for many years, which is exemplified by the national aquatic action plans setting reduction targets for nitrogen, in particular, as well as associated measures to achieve those targets. Thus, the Danish approach to WFD implementation relied heavily on existing policy traditions which resulted in an ambitious top-down approach, as reflected in the 2009 Green Growth Agreement. In the Commission's review of the Danish RBMPs, it is noted that Denmark has included a high level of detail: "In each RBMP, all planned mitigation measures, including agricultural measures, have been listed, and the approximate area has been described, together with the costs and the effect of these measures" (European Commission, 2012a, p. 3). It could be said that Denmark, in the WFD implementation process, follows the typical German approach to regulation with command and control as well as formality, leading to effective results, as opposed to the British approach which is based more on self-regulation, informality, flexibility and the consideration of circumstances, all of which is likely to lead to less effective regulation and results (Knill and Lenschow, 1998).

However, the Danish approach, as demonstrated above, has weaknesses and the science-policy integration, in particular, has been challenged by a lack of local data and legal foundation (Quevauviller, 2005; Willems and Lange, 2007). Bourblanc et al. (2013) also note the slowing down of the hare due to political pressure from agricultural interests as well as potential implementation problems embedded in a "relatively strong separation of central policy formulation and local policy implementation". The Danish hare has, however, not only slowed down, it has actually stumbled, resulting in a ruling by the European Court of Justice on non-compliance due to delays in adopting RBMPs as well as a gradual withdrawal of the most important agricultural measures.

While the abundant literature on WFD implementation has mainly focused on explaining the policy style chosen by different Member States, this article focuses on the implementation challenges linked to the adoption of specific mandatory measures aimed at reducing agricultural pollution.

The implementation analysis is linked to an assessment of selected core aspects used when evaluating measures, including;

1. Effectiveness (and cost-effectiveness)
2. Scale and location issues
3. Legal issues

These three core elements are used in this paper as indicators for the level of legal and regulatory complexity linked to the implementation of measures. It is argued that uncertainty regarding one or more of these components increases regulatory uncertainty and may undermine the legitimacy or acceptability of adopted policy measures. This analytical approach adds to the existing literature and theory on WFD implementation with a particular view to the implementation of mandatory − measures. While issues of effectiveness and scale have been addressed in much of the literature, the linkages to legal and regulatory issues is more limited. The legal and regulatory complexity is linked to the "wicked" character of addressing agricultural pollution of water (Patterson et al., 2013; Martin-Ortega et al., 2015; Gunningham and Sinclair, 2005). Nonpoint source water pollution, including agricultural pollution, has been identified as "wicked" due to "the multiple pollution sources, drivers, actors and management arrangements, and outcomes" (Patterson et al., 2013).

Effectiveness, and the associated issue of cost-effectiveness, is clearly linked to the estimation of the potential effects of a measure in terms of providing (environmental) benefits on a given location. When the potential costs of achieving such effects are added, cost-effectiveness emerges, which is a key issue in the WFD.

Scale may relate to several aspects, including the spatial scale of the application of measures, e.g. nationwide, river basin, catchment or even water body level, and the maps required to support this choice. Another important aspect is at which scale or level the measures are determined, e.g. national or local level, and the level at which the analyses of e.g. effectiveness, are made. The question of scale and geographic location plays a crucial role as regards to the WFD objectives of achieving a good status in all (identified) water bodies assuming a certain level of knowledge as regards site-specific conditions. From a regulatory point of view, particular challenges are related to mismatches between spatial and temporal scales (Martin-Ortega et al., 2015) as well as the need for local management action (Patterson et al., 2013).

Legal issues are, in this paper, primarily linked to the questions of