



HAL
open science

Risk-based governance against national obstacles?

Regine Paul, Frederic Boudier, Mara Wesseling

► **To cite this version:**

Regine Paul, Frederic Boudier, Mara Wesseling. Risk-based governance against national obstacles?: Comparative dynamics of Europeanization in Dutch, French and German flooding policies. *Journal of Risk Research*, 2016, pp.1 - 20. hal-02135422

HAL Id: hal-02135422

<https://sciencespo.hal.science/hal-02135422>

Submitted on 21 May 2019

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Risk-based governance against national obstacles?

Comparative dynamics of Europeanization in Dutch, French and German flooding policies

Regine Paul, Frédéric Boudier and Mara Wesseling*

*corresponding author: regine.paul@uni-bielefeld.de

Comparative studies have recently highlighted obstacles related to continental European countries' proclivity for adopting risk-based policies. However, so far, the interface between risk-based policies in the EU and potential policy change in reluctant member states has been underexplored. We compare flooding policies in the Netherlands with those in France and Germany to establish the extent to and conditions under which EU level risk-based policies can transform national approaches. Drawing on the concept of Europeanization, we compare national adaptation pressures stemming from the EU floods directive, investigate adaptation dynamics, and account for transformations towards risk-based thinking. We find that Europeanization enabled a mainstreaming of risk-based policies in France and Germany, as national actors used the EU venue to entice a desired policy rationalization and centralization. By contrast, and somewhat unexpectedly, the Netherlands partially retrenched from EU procedures because the directive's reporting mechanisms were considered to breach The Hague's aspirational policy approach. Overall the paper indicates a strong potential for even 'soft' EU policies to ease national reluctance to risk-based governance. It also indicates limits where member states use risk-based techniques within an aspirational protection framework.

HowSAFE Working Paper, No. 3 27 March 2015



Research for this paper was supported by a grant awarded through the Open Research Area Programme for the Social Sciences jointly funded by the ESRC (ES/K006169/1), DFG, ANR, and NOW (<http://tinyurl.com/howSAFE-project>).

1 Introduction

A corollary of the growing interest in the limits of “risk-based governance” (Pfister and Renn 1997; Löfstedt 2011; Rothstein et al. 2013) is the formulation of hypotheses about the emergence of *risk as a regulatory tool*. *Risk-based governance*, it is argued, may optimize regulation by enabling an ex-ante rationalization of acceptable and tolerable kinds and levels of harm in relation to various hazards (Krieger 2013; Rothstein et al. 2006; Paul and Huber 2015). Actuarial risk assessments, calculating the impact times the probability of a future damage, form the basis for such differentiated policy interventions. Preliminary evidence suggests that while ‘Anglo-Saxon’ countries have been at the forefront of conceptualizing and applying risk-based governance (NRC 1983; Royal Society 1983), ideational and institutional obstacles inhibit its adoption in continental European countries. A pilot study by Rothstein et al. (2013) highlights that factors such as fragmented decision-making systems (Germany), or constitutional equality norms (France) can severely hamper these countries’ receptiveness to risk tools.

Flood risk management seems to be a prime example for such obstacles, as a recent study of British, Dutch, French and German policies highlights (cf. Demeritt et al. 2015). The Dutch approach has combined early probabilistic modeling (Van Dantzig 1956) with the distinctively conservative choice of *keeping feet dry* (Bijker 2007) at almost any cost. Comparisons of England and Germany indicate that while the former embraces risk-based tools, the latter remains rather adverse to their use in drafting flooding policies (Krieger 2011, 2013). However, the adoption of risk-based tools in flooding regulation is no longer merely about national proclivities. With the 2007 EU flood risk management directive (floods directive), an actuarial definition of floods and a common risk assessment method has been prescribed. This bears the potential to establish and expand the use of risk-based regulatory tools in member states — also against obstacles.

Our comparative policy analysis addresses the so-far underrated role of European integration in risk-based governance research. By examining adaptation processes in response to the floods directive in the Netherlands, France, Germany – three countries that have not been considered to fit with the new EU approach – we establish the first empirical evidence on whether and how European integration can entice the adoption of risk-based governance. We apply the concept of *Europeanization* (e.g., Featherstone 2003; Vink and Graziano 2008; Saurugger 2013) to scrutinize the dynamics between a) the European integration of flooding policies around a risk-based approach, b) adaptation pressures stemming from ‘misfits’ with domestic arrangements, and c) domestic policy and governance changes

(Caporaso 2008, 33). We thus duly cross-pollinate accounts of the variable adoption of risk-based governance with long-standing insights on the top-down Europeanization of policies in member states.

We minimize methodological problems associated with Europeanization studies – e.g. that the concept could be “a cause in search for an effect” (Goetz 2001) – in two ways. Firstly, we choose flooding policies as exploratory case, precisely as one of a very recent European integration around risk-based thinking. This is in contrast to risk analysis requirements in work safety or risk-based food safety inspections. Flooding policies promise in-vivo observations of the domestic impact of EU-induced risk-based thinking, including potential resistance. Secondly, we take on board the good advice of Europeanization scholars (e.g., Lehmkuhl 2008; Radaelli 2003) and control for alternative explanations. The co-observation of counterfactuals serves as key selection criterion for our comparison: with France, Germany, and the Netherlands, we deliberately choose three member states which have been involved in intense regional coordination of flooding policies in various river catchments¹ *long before* any EU regulation. We can thus co-observe drivers towards risk-based thinking which build on international and interregional coordination processes in shared river basins, rather than on Europeanization.

Our argument unfolds as follows. Section two reviews insights from risk-based governance and Europeanization studies in order to create a dialogue between two previously unconnected realms of research and thereby establish one integrated analytical framework. Our subsequent analysis draws on a range of policy documents and 34 semi-structured interviews² with policymakers in Brussels and the three countries. Section three maps the requirements of the EU floods directive for risk-based thinking against pre-existing domestic policies to identify comparative adaptation pressures. Section four compares and explains adaptation dynamics in France, Germany, and the Netherlands. Lastly, we discuss the wider implications of our analytical joint-venture of risk-based governance and Europeanization research.

2 Domestic obstacles to risk-based governance? The unexplored role of Europeanization

This section introduces key tenets and insights of the risk-based governance literature. We identify a need to better account for the interface between European integration and member states’ proclivity to adopt risk-based policies. The Europeanization literature provides a fruitful analytical framework to

¹ Especially note the foundation of the International Commission for the Protection of the Rhine (ICPR) in 1957.

² The anonymized list of interviews can be requested from the authors.

examine such interaction dynamics.

Risk-based governance and its domestic obstacles

Risk-based governance studies highlight that, in policy-making and consultancy, “risk analysis is promoted as a method framing all aspects of governance activities” and it hinges on the promise of “ex-ante rationalization of the limits of what governance interventions can, and should, seek to achieve” (Rothstein et al. 2013: 216f). Risk-based governance comes with promises of increased efficiency, transparency, and accountability of decisions. As policymakers start to appreciate such rationalization promises, risk will ‘colonize’ regulatory regimes and become a ubiquitous governance tool (Rothstein et al. 2006). Kristian Krieger (2011, 47, table 3) thus identifies the potential for risk-based flooding policies across all three key functions of regulatory regimes:

- a) assessment of probability and consequences in information-gathering (e.g. flood risk mapping),
- b) design of management goals based on risk analysis (e.g. differential safety standards), and
- c) a risk-based selection of enforcement measures (e.g. risk premiums in flood insurance or differentiated funding models).

Currently, the EU’s floods directive primarily targets the first of these functions with its risk-based mapping procedure. However, both the risk colonization thesis and Europeanization research (see below) provide reasons to expect at least indirect transformations in standard-setting and enforcement, which could occur as a result of defining floods as actuarial risks and information-gathering.

Despite the potential ubiquity of risk-based thinking (vividly described by Michael Power as “the risk management of everything”, 2004) scholars of risk-based governance expect severe institutional and ideational limits to the spread of the approach (Löfstedt 2011). For example, Germany’s federalist multi-level system of decision-making is believed to “amplify fundamental uncertainties about the use of risk in decision-making” as norms and interests compete in complex ways (Rothstein et al. 2013, 226; cf. Lodge 2011). This is highly relevant for de-central flooding policies in Germany. French flooding regulation is associated with a dedication to security provision and equal rights, which would rather hamper discriminatory risk-based decision-making (Rothstein et al. 2013, p. 223). In the Dutch case, a country which has large parts of its territory under sea level, we expect that a dedication to “dry feet” (Bijker 2007) would constitute a major obstacle to the ex-ante acceptance of flooding risks (cf. Demeritt et al. 2015).

Problematically, however, the literature above mainly considers *domestic obstacles* to risk-based

thinking. It disregards the role of intermediary factors beyond nation states which may help surmount national incompatibilities or aversions to risk-based governance. Our key claim is that European integration processes can play a crucial role here. For some time now, EU regulations and directives have established risk analysis, risk-based standards, and enforcement activities within the *acquis communautaire*. For example, EU regulation on chemicals at workplaces uses an actuarial definition of risk as “the likelihood that the potential for harm will be attained under the conditions of use and/or exposure”. It demands differentiated protection measures and occupational exposure limits based on risk analysis (CEU 1998, art. 2). Similar definitions exist for air pollution, noise, radiation, or food safety standards and the EU Commission’s DG Environment is currently developing “a systematic approach to risk” which would rationalize all its policy interventions with risk assessments (expert at DG Environment).

We argue that risk-based rationalizations in EU regulation bear the potential to overcome, or at least mitigate, national obstacles to such thinking. We turn to the Europeanization literature next to conceptualize the domestic impact of Europe vis-à-vis adoptions of risk-based governance in hesitant member states. This leads into our subsequent comparison of flooding policies.

Europeanization as a driver for domestic adoptions of risk-based governance

We consider Europeanization a useful analytical concept for the purpose of this paper because it enables us to scrutinize the interaction of risk-based European flooding policies and the potential surmounting of domestic reluctances to adopt risk-based thinking. While not offering a comprehensive review here (see Featherstone and Radaelli 2003; Graziano and Vink 2008; Saurugger 2013), our outline establishes the potential role of Europeanization in domestic adoptions of risk-based governance.

We start with the influential definition of Europeanization by Claudio Radaelli (2003, 30):

“Processes of (a) construction, (b) diffusion, and (c) institutionalisation of formal and informal rules, procedures, policy paradigms, styles, ‘ways of doing things’, and shared beliefs and norms which are first defined and consolidated in the making of EU public policy and politics and then incorporated in the logic of domestic discourse, identities, political structures and public policies.”

Similarly, Palier and Surel (2007, 39) suggest that, “Europeanization consists of all institutional, strategic and normative institutional adjustment processes induced by European integration.” From these perspectives, Europeanization is an independent variable which can explain transformation and adjustment processes at the national level. In our case, it can help understand turns to risk-based

governance against national obstacles. A large debate has materialized around different dynamics of Europeanization, mainly concerning uploading (member states export to the EU), downloading (member states import from the EU), and circular processes of interaction between the EU and member states (cf. Saurugger 2013). As our empirical interest is on the EU-induced introduction of risk-based approaches against domestic obstacles, we concentrate on top-down Europeanization or downloading here.

What then renders downloading likely? The existence of adaptation pressures caused by ‘misfits’ is assumed to play a key role. These pressures are understood as, a) policy norms and substances themselves which cause compliance costs, and b) institutions where EU policies challenge “domestic rules and procedures and the collective understandings attached to them” (Börzel and Risse 2003, 62). In a more refined model, Europeanization is treated as a sequential causality between an existing European norm (risk-based flood mapping in our case), how well it fits with domestic norms and institutions, the role of mediating institutions at domestic level, and eventual policy change (Risse et al. 2001). This lens renders Europeanization an especially helpful analytical concept for our account of adjustment processes in settings that have *not* adopted risk-based governance before. Indeed, in France, Germany, and the Netherlands we find strong ideational and institutional misfits with EU flooding policies (section 3, also see Demeritt et al. 2015). In contrast to the risk-based governance studies above, however, Europeanization considers domestic misfits not as insurmountable obstacles to risk-based governance, but calls us to examine whether EU adaptation pressure can overcome them, and if so how.

Five different adaptation processes in response to misfit are distinguishable for empirical mapping (Radaelli 2003; Börzel and Risse 2003; cf. Saurugger 2013):

- 1) *inertia* (lack of change despite adaptation pressure)
- 2) *absorption* (incorporation of policies without fundamental changes to processes, policies, ideas and institutions)
- 3) *accommodation* (adaptation of processes, policies and institutions without changing key ideas)
- 4) *transformation* (replacement of processes, policies and institutions by substantially different ones or alteration in way that changes ideas)
- 5) *retrenchment* (decreasing EU-ness of existing processes, policies, ideas, and institutions).

Europeanization scholars have developed several explanatory venues for these so far descriptive adaptation processes. Firstly, some suggest that adaptation pressure, and hence the capacity of ‘misfits’ to induce domestic change, is highest in cases of positive and negative integration. Where the EU either prescribes policies and standards, or changes opportunity structures and market behavior directly (Bulmer 2008) – like in the case of environmental and transportation policies – coercion explains domestic adjustment. In the meantime, the explanatory power of ‘misfit’ has been questioned for ‘softer’ fields of regulation (Radaelli 2003; Dyson 2008). As we will see, the floods directive does not prescribe any standards or enforcement practices, and thus lowers its potential to transform domestic policies towards more risk-based approaches.

Secondly, however, more constructivist studies highlight the ability of soft EU regulation to change domestic policy arrangements more considerably. For them, soft regulation features epistemic tools and heuristics, which involve both procedural and ideational adaptation pressure. Ulrika Mörth (2003, 162) proposes that even in the absence of legal rules for standards and enforcement, the EU can “determine how an issue is to be interpreted” when it prescribes a specific terminology, knowledge frame, or policy procedure. In social policy – an area where the EU hardly uses binding rules – the use of benchmarking and information exchange through the so-called open method of coordination (OMC) has harmonized the framing of social policy problems and their solutions (Falkner 2008). EU environmental policy-making likewise includes “procedural regulation such as the Environmental Impact Assessment ... [which] not only challenge[s] regulatory styles but also create[s] changes in administrative structures”. This is mainly because of centralized reporting procedures vis-à-vis Brussels (Börzel 2008, 232; also Haverland 2003). Risk mapping, issue framing, and reporting procedures are legally binding in our own empirical case: the floods directive establishes a common articulation and analysis of flood events as actuarial risks and a coordinated and centralized reporting procedure, which *has to be* incorporated in member states, meaning that ideational and procedural misfit will potentially entice adjustments.

Thirdly, soft regulation can also serve as a powerful source of domestic change – even in the absence of coercive EU policies – when national regulators see, and successfully use Europe as “a smokescreen for domestic policy manoeuvres” (Buller and Gamble 2002, 17; cf. Radaelli and Saurugger 2008). In this context, Saurugger (2013, 128) discusses the potential for the “indirect transformation” of domestic policies where they can strategically strengthen existing favored practices, catalyze desired new institutional forms, or change opportunity structures at the national level. Exemplary is Virginie Guiraudon’s (2000) account of asylum policies, demonstrating how German and Swedish core executives utilized EU regulation as a venue to circumvent national constraints to restrictive reforms.

Kenneth Dyson (2008, 292) highlights how policymakers “can create ‘misfit’ ... to accelerate reforms” in the field of monetary policies. Domestic actors are likely to favor Europeanization and more risk-based policies. This occurs also in the absence of ‘hard’ integration measures, where it increases their capacity to establish desired ideas, policies, or procedures against domestic opposition.

3 Pressure to adapt? EU flood risk management vs. domestic policy approaches

In order to establish the extent to which Europeanization can mitigate national disinclinations to adopt risk-based flooding policies and the conditions under which this occurs, our comparative analysis proceeds in two steps. In this section (3), we identify procedural and ideational adaptation pressures which member states face vis-à-vis the EU floods directive. The subsequent section (4) will first map domestic adaptation processes and then explain policy changes, or the lack thereof. We draw on a document analysis and 34 interviews with policymakers at the national and EU level.

EU flood risk management – soft governance through risk terminology, risk analysis, and milestones

Reacting to devastating floods along the Odra and Elbe rivers, the EU decided to harmonize flood risk assessments in the early 2000’s. This was carried out in order to ensure better coordination along shared rivers and coasts and to reduce flooding-related damages (expert at DG Environment). These aims were codified in the floods directive of 2007 with the help of a common risk terminology as well as a common risk mapping and reporting procedure.

Conceptually, the directive applies an actuarial definition of flood risks as the product of probability and impact: “the combination of the probability of a flood event and of the potential adverse consequences for human health, the environment, cultural heritage and economic activity associated with a flood event” (CEU 2007, article 2.1). It further establishes a procedure for risk-based information-gathering, which is new to many member states. National authorities are to identify “those areas for which they conclude that potential significant flood risks exist or might be considered likely to occur”. This identification is based on a two-step risk analysis: a probability assessment for “(a) floods with a low probability, or extreme event scenarios; (b) floods with a medium probability (likely return period ≥ 100 years); (c) floods with a high probability, where appropriate.”; and an impact assessment which cross-tabulates factors such as affected number of inhabitants and economic values across the three likelihood categorizations. An actuarial definition of flood risk and a mathematical method of flood risk assessment are thus mainstreamed across the EU.

In terms of procedural requirements, the directive sets milestones for a centralized – or at least centrally coordinated – reporting mechanism which is revised every six years. A first step asks member states to report areas “at significant risk of flooding” to the EU. For these areas, it then demands the drafting of so-called ‘flood hazard maps’ (probability) and ‘flood risk maps’ (probability times impact) by 2013 (to be revised in 2018). Next, ‘flood risk management plans’ (FRMPs), which are based on the differential risk information, need to follow by 2015 (to be revised in 2021). A central national competent authority has to report all of these steps (CEU 2007). In the revisions every six years, progress will be checked against the objectives that member states have set out in their FRMPs.

Beyond the obligation to employ actuarial definitions of flood risk and to conduct risk-based information-gathering, the directive’s milestones and evaluation approach also has the potential to inform risk-based standard-setting and enforcement. Certainly, experts DG Environment express clear limits to its harmonization mandate: “So a framework [for risk analysis] is created, some milestones are there. ... But we are not saying to member states “you have to reduce risk by ten per cent the probably of something.” This is left to the member states.” At the same time the expert hopes — quite typically for soft governance mechanisms in the EU (Kjaer 2010) — to steer aspirations for reduced risk-based flooding through the repeated assessment cycles: “We want to ... see progress. ... [W]e will try to arrive at some conclusions and recommendations and good practices, which we will try to incorporate into the next cycle of implementation of the floods directive. ... I mean this is an aspiration for the floods directive.” Framing the issue of floods as actuarial risk might eventually inform how standards and enforcement are framed, too.

Further, the requirement to report centrally to the EU and to coordinate flood risk mapping and management along river catchments may help harmonize fragmented domestic policy approaches. Already delegates of the ICPR – a self-proclaimed forerunner of coordinated flood risk assessment and management – have contributed a great deal to EU-level negotiations surrounding the directive and expressed hopes for a more harmonized and rationalized approach across the EU (expert at DG Environment and expert from Rhineland-Palatinate, also see Mostert 2009). As the Europeanization literature suggests, the floods directive may entice venue-shopping among actors who favor more risk-based and coordinated approaches. They may use the reporting, evaluation, and benchmarking mechanisms related to the FRMPs to crack reluctance and mainstream their model across the country.

Ideational adaptation pressures in Dutch, French and German flooding policies

The pressure to adapt to the flood directive's risk framing and risk assessment seems particularly high for France and Germany. Firstly, both countries may have introduced risk language in flooding policies in the last two decades, but prior to the directive this was still focused on hazard-based definitions of flooding events. In France, a shift from technical protection towards flood prevention involved notions of 'risk' and 'risk culture'. The 1995 Barnier law introduced the *Plan de Prevention de Risques Inondation* to limit new construction projects in high flood risk zones. The 2003 Bachelot law called for the development of a "risk culture", which accepts floods as unavoidable risks of which the negative consequences must be managed. Despite these shifts, the EU directive is perceived as nothing less than a 'paradigm shift' in France, since its actuarial understanding of risk systematically considers not just probabilities, but also the variable impact of floods (civil servants at the Rhône region). The directive also challenges the French state's reactive approach which, despite having a constitutional obligation to protect its population³, has so far not considered flood risks systematically or as a political priority⁴.

In Germany, flooding policy is a communal and at best regional matter, leading to high unevenness in approaches to data-gathering, definition of floods as hazards vs. risks, and uniform vs. differential policy responses. An official from Lower Saxony summarizes: "the term flood protection has no shared legal foundation in Germany". Some federal states (Länder) use actuarial risk analysis and cost-benefit calculations to target their co-funding of communal protection infrastructure (e.g., Baden-Württemberg, Rhineland Palatinate, Schleswig-Holstein), as do some municipalities (e.g., Cologne, Mainz). However, an actuarial definition of risk is no general legal requirement. A first attempt at harmonization came with the Flooding Protection Act in 2005 (*Hochwasserschutzgesetz*), which highlighted the need to improve flood risk prevention policies in a consistent way across the country. This act introduced a common standard for flood hazard mapping and land-use, which was based on flood events with a statistical return period of 100 years (HQ100). But, it lacked a consideration of variable impact and thus failed to mainstream a risk-based concept of flooding (Krieger 2013).

The Netherlands has been at the forefront of developing actuarial definitions of flood risks and sophisticated risk assessment techniques. After the deadly (1,836 casualties) storm surge of 1953 (*Stormramp*), the first Delta Committee introduced a combination of an actuarial and cost-benefit

³ Equal protection norms feature more importantly in the state insurance system CATNAT, which provides compensation for flood damages to every house owner in high risk areas.

⁴ Flood risk management does not have a high saliency in French politics with flood risks being ignored very swiftly after an event (civil servants of the Rhône region and a French think tank; Langumier 2011).

approach to determine optimal levels of protection that could keep Dutch people's "feet dry" (Van Dantzig 1956). Both impact and probability variables such as failure probabilities of individual dike-ring sections, areas affected, topography, flow velocities, inundations depths etc., are considered in a differential risk analysis. Differential protection standards are applied to different dike-rings and advanced risk modeling with sophisticated mapping is used to estimate various risks. Although set very conservatively, practical considerations of feasibility and affordability affect respective standards: they vary by risk levels and seek to react to ever changing natural and economic conditions. For example, flood defense standards in the 1996 Flood Defense Act differ according to the economic value of the assets in the respective dike-ring areas (for an in-depth discussion see Jongejan 2008).

Pressure to adapt to the EU floods directive may stem, however, from century-old safety ambitions and an aspirational approach to flood prevention. With large sections of the Netherlands exposed to the North Sea or under sea level, the country is notoriously vulnerable to, and aware of, flooding risks. Arguably, the appetite for risk-based practices in the Netherlands stops at the prospect of lowering protection ambitions. After the *stormramp* of 1953, the Delta Committee was created on the premises that this should "never happen again". Subsequently, actuarial quantification of flood risks went together with the aim to limit rather than accept risks (Ale 1988). As one official from the *Rijkswaterstaat* points out: "we don't guarantee absolute safety [...] but we are by far the safest delta in the world". As the 1960 report of the Delta Committee⁵ (Van Dantzig and Kriens 1960) suggested, dikes should high enough so that the sea can only reach the top once every 10,000 years. These ambitious standards may be best described as aspirational. They fulfill the goal of injecting continuous improvement pressure into the system. Dutch flood defense policies are "explicitly based on an attempt to balance the costs and benefits of risk reduction" (Jongejan 2008: 46) and enable risk-based differentiation where economic values are concerned. Nevertheless, the "maximum protection" objective (Wolsink 2006) with regard to human lives – usually at stake in the Netherlands! – and a legally enshrined aspiration for constant protective infrastructure improvements, consistently impede any risk-based acceptance of flooding.

Procedural adaptation pressures in Dutch, French and German flooding policies

When procedural misfit is considered, the Netherlands pose less reason to expect adjustments to EU flooding policies than France and Germany. Given its high vulnerability, the Dutch regime has known

⁵ This is the foundation for subsequent flood regulations (RIVM 2004: p.14).

a historic centralization of flood-related decision-making and standard-setting from locally elected water boards to central government. Centralization has been paired with coping strategies of soft persuasion rather than brute force as well as cooperative approaches (Bijker 1993).

France and Germany entertain much more fragmented approaches that are now challenged by the EU's central reporting and coordination requirements. In France, ambitious and costly state-led flood defense programs co-exist with a patchwork of numerous small-scale local initiatives, which often go unnoticed from a central state planning perspective. Similarly, various land-use planning instruments have been developed by engineers of central state services since the mid-19th century⁶, but are often ignored by regions and municipalities. Many of them expanded into official flood risk zones for economic reasons (e.g., Ledoux, 2006; Rode, 2008). The EU flood risk maps now call for a more systematic *overall* picture of flood risks in France and may thus problematize the fragmented approach to flood defense and land-use planning.

Similarly, the German state delegates the planning and financing of flooding policies to the 16 Länder, the more than 400 municipalities, and self-regulated dike associations. This disinclination to regulate flooding issues hierarchically from the center builds on historical patterns of self-regulation (Allemeyer 2006). Intending a more centralized flood risk management, the 2005 Act requires Länder to draft flood protection plans (*Hochwasserschutzpläne*) for river basins in cooperation with bordering Länder and countries. For some catchments such as those of the Rhine, Mosel, or Saar, cooperation is long-standing and enables a centralized enforcement of the EU directive. Experts from the Rhine Länder argue that cooperation in the ICPR has informed mutual definitions of flood risks (rather than hazards!) and differentiated risk reduction goals since at least the late 1990's (publication of the Rhine Atlas and Action Programme, e.g. officials from the ICPR and Rhineland-Palatinate; also see Huisman et al. 2000). While federalism seems to inhibit centralized systematic flood risk assessment and management in Germany, the pressure to adapt to coordinated EU risk-mapping requirements may be a venue for longstanding international river basin cooperation networks to mainstream more risk-based flooding policies.

4 Risk-based through Europeanization: explaining comparative adaptation dynamics

We now turn to the comparison of Dutch, French, and German adaptation processes and their

⁶ Plan de zones submersibles (PZS), 1858 ; Plans de Surfaces Submersibles (PSS) 1935 ; Plan d'Occupation des Sols (POS) 1967 ; Plan de Prevention de Risques Inondation (PPRI) 1995.

explanations in order to establish the role of Europeanization vis-à-vis domestic obstacles to risk-based governance.

Embracing new ideas by old means: Ideational adaptation in France and Germany

Following the EU directive, both France and Germany redefined flood risks from a hazard-based to a risk-based concept. These changes were either accommodated or absorbed by existing policies and institutions. The (few) coercive elements of the directive, regulating assessment criteria and probability scenarios top-down, partly account for these adaptation processes. Furthermore, resistance to risk-based ideas was low as policymakers embraced the virtues of a more systematic assessment (and management) of flood risks, thus welcoming the EU venue for change. No such shifts were necessary in the Netherlands as a *Rijkswaterstaat* official noted: “[W]e are not adapting to the directive. If there wouldn't have been a directive, we would still have carried out the Delta Programme.” The Dutch case displays different adaptation dynamics and will be analyzed separately and in further detail below.

In both France and Germany, a transformed understanding of flood risks can be observed. Policymakers in France agree that flood risks had been severely underestimated in the past (expert at a French think tank). The word ‘*risque*’ merely considered flood hazards prior to 2007. Furthermore, the directive informed a broadening of flood risk management to include vulnerability, flood resilience, and crisis management aspects (civil servant at the French Ministry of Ecology). Such an ideational expansion was welcomed in France as one expert notes: “it might seem banal, but until now [hence prior to the Directive] we had never thought about evacuation strategies and how to keep people in place and how this should affect urban planning” (civil servant Ile-de-France region). At the same time the French constitutional principles of equal rights and universal state protection are not under attack by the directive. This could account for increases the acceptability of the new definition of risk. Firstly, the fact that the central state has not drafted any plans to have risk maps transforms the eligibility of local flood protection measures for national funding. Secondly, the challenge of equality norms by risk-differential approaches is limited, as long as compensation is arranged through the solidarity-based CATNAT scheme.

Equally, in Germany, the most direct pressure for policy change was felt with regard to new risk assessment criteria: a federal level official argues that: “the risk assessment criteria ... and the induction and definition of risk ... had to be aligned with Europe” (official at the Federal Ministry of the Environment). Existing hazard maps had to be changed to include impact assessments and to cover frequent and rare events – previously neglected with the HQ100 concept. Both the more fine-grained

probability assessment and the novel impact assessment considerably transformed the German understanding of floods from hazards to events bearing actuarial risk. This change was welcomed by German policymakers. Ministerial planners from Lower Saxony and Rhineland-Palatinate argued that flood risk maps can justify more clearly the limits of public accountability and strengthen private risk prevention duties (which are stated in the 2005 law, but are all-too-readily forgotten in political struggles over damage removal and pay-outs).

Actuarial risk ideas did, however, not lead to an overhaul of prior policies and methods. In both France and Germany, existing institutions at the regional or communal level respectively, were charged with risk mapping. At best, they recruited extra staff to manage the workload (expert from large municipality in North-Rhine Westphalia). In France, flood risk mapping draws on existing maps and statistical information. According to the former French Minister, the directive has been implemented as much as possible in continuity with existing practices. For example, France avoided the preliminary risk assessment step suggested by the directive and instead used the existing “atlas of zones prone to flooding” (Martini, 2007, p. 79). This simply added to the EU-prescribed risk scenarios and impact assessments: “We had the habit of working with the medium scenario, the hazard maps in the PPRI are usually based on HQ 100 floods. So this, we already had. We did not have the more frequent and the more extreme scenarios. So we designed new maps.” (civil servant Ile-de-France region).

Similarly in Germany, Länder and municipalities in charge of risk mapping and FRMPs also “built on a lot of old things” in terms of methods and data. Some had used similar maps before but did not publish them systematically and thus contributed little to raising risk awareness among the population or to rendering flood risks comparable across localities (official at Federal Ministry of the Environment). As discussed above, Länder policymakers hoped that the political impulse to throw money at disasters ad-hoc can be contained by making more systematic and differentiated risk information available.

Defending the aspirational protection approach: procedural retrenchment in the Netherlands

While both the EU’s flood risk terminology and risk-based assessment already existed in the Netherlands, we observe the following dynamics: a) inertia with regard to the EU’s requirement to differentiate between significant flood risk areas and those at negligible risk (to be exempted from risk mapping and planning); and b) retrenchment concerning the reporting and evaluation mechanism of the EU directive. Both are explicable in light of the aspiration to high standards for protection in Dutch flooding policies. Contrary to the EU’s differentiation of significant at risk flooding areas, Dutch policies consider the whole country at significant risk. A Dutch official pointed that “water comes

from all directions, underground, sky, coast and rivers” (Ministry of Infrastructure and Environment). Another one that “this is why we prefer to call it [i.e. flood defense] water management” (Ministry of Infrastructure and Environment).

Certainly, factors of topography, population density, economic values etc. are taken into account in Dutch risk maps (see above), thereby making differential solutions to flood risks acceptable. Yet, from a Dutch perspective the idea of differentiating the territory into ‘safer’ (non-floodable) and ‘less safe’ (floodable) areas is flawed. Officials at the Ministry of Infrastructure and the Environment classify the entire country as “floodable”, connecting this with proactive interventions. This universal assessment led the Commission – not happy with the lack of differentiation prior to the mapping exercise – to demand clarification. Dutch bureaucrats defended the procedural inertia by referencing the distinct Dutch topography and the concentration of human and economic values in the Delta region:

“We can't afford to move every winter to de Veluwe [in the Eastern part] and then in summer come back. Not with ten million [of 16 million] people living here [in the high flood risk Western part]. ... when you look at the flooding patterns, well you see a large part of the Netherlands is influenced. ... Once you build, you have to protect.” (Rijkswaterstaat official).

Closely linked to this argument over legitimate Dutch exceptionalism is an element of procedural retrenchment. The aspirational nature of the high Dutch safety standards for flooding seems to clash with the EU’s system for checking progress on the directive’s implementation: “The European way of handling directives is a bit counterproductive. If you set your ambitions low and you reach them, you do well. If you set your ambitions high and you reach half of it ... you will get punished.” (Rijkswaterstaat official). From the Dutch perspective, cautious goal-setting based on the reachability of safety levels would imply an unacceptable lowering of the country’s long-standing aspiration to advance flood protection. The Dutch government sees longer-term and ambitious safety standards as a way to push for constant improvements, even if this means that not all of them can be reached within the proposed schedules. In that regard, an expert involved in the ICPR coordination prefers the Rhine Action Plan to the new EU-induced FRMPs:

“There we were able to set an ambitious goal, which maybe at that time they thought they could reach this by 2020. Now we see to 2030 and we cannot reach the complete goal. ... But that was not a problem. We had a goal and we were working towards that. Under the flood directive, it is - let's say - more pragmatic.” (Rijkswaterstaat official)

The Dutch react with a partial retrenchment from EU processes. High safety goals and deliberately ambitious prevention and protection plans continue to determine flooding policy. In order to avoid being punished for not meeting high aspirations, however, the government intends to report only feasible goals to Brussels in their FRMPs. Without compromising their underlying aspirational approach to flooding policy, the Dutch will thus nicely play along in the EU reporting and evaluation rounds officially, while actually retrenching from genuine policy benchmarking.

Resistance vs. venue-shopping: the struggle over procedural transformation in France and Germany

In contrast to the Netherlands with its centrally coordinated flooding policy model, France and Germany have experienced high pressure to adapt their fragmented approaches to the EU's flood risk management requirements. Our evidence shows that this procedural aspect of Europeanization has been a bigger source for struggle than the ideational turn described earlier. We mainly find venue-shopping dynamics at play where national actors favoring the centralization, or at least coordinated mainstreaming of risk-based approaches, seek to gain more power over those who remain skeptical.

In France, struggles over national and communal competencies surfaced soon after the implementation of the directive began. On the national level, the directive was welcomed as an opportunity: "The directive is an extreme driving force, many people shared the opinion that we needed to change scales [from local to national] and was also a pretext to kick-off these changes" (civil servant Ile-de-France region). Indeed, the directive's central reporting scheme seems to empower central state services at the expense of the regional and the local actors, foreshadowing a considerable procedural transformation. Struggles between central and local actors have certainly been a characteristic of the French flooding policy regime before, e.g. centrally prescribed PPRI vs. the free administration of municipalities and local interests. Yet, the need to draw new flood risk maps and report coordinated management plans to Brussels seems to shift powers to the central level.

As a result, on the regional level uncertainty and discontent about the directive's implications have emerged. Some local and regional actors are afraid of losing opportunities for future development if central FRMPs consider land-use too risky in high risk zones. Municipalities have therefore protested against differentiated risk scenarios: "the notion of probability is not something that is easily accepted" (civil servant Ile-de-France region). It is also still unclear whether the designation of high flood risk zones will be linked to eligibility for national funding of communal measures, meaning that local authorities remain uncertain whether they should aim at or avoid being included as high flood risk

territory. Overall, the floods directive has kicked off a potential and on-going transformation of the relationship between central state and regional and municipal governments in France – giving the central state the power to introduce more risk-based land-use planning and prevention measures.

For Germany, better coordination within the country seems inevitable “to avoid a letter from Brussels for dividing flood risk management by Lander borders” (official at the LAWA). Policymakers widely recognize the need to coordinate approaches more closely in order to respond to new data-gathering requirements: “what did not work so well thus forth, and the directive will hopefully bring change here ... is simply a better denticulation within Germany, meaning between Länder” (official at the Federal Ministry of the Environment). They see potential for an eventual harmonization of standards for flood prevention and protection, with the directive indicating “that we have room for improvement regarding the overarching cross-regional flooding policies” (official at the LAWA). Guidelines for the implementation process by a Länder working party (LAWA – with representation of the federal level) suggests the accommodation of a more coordinated approach *within* federalized structures (e.g., LAWA 2013).

Some venue-shopping dynamics surface in this context as well, especially when considering the Rhine Länder. Considering themselves as forerunners, they now seize the EU venue to establish theirs as the most suitable approach for Länder coordination. Since risk terminology and risk-based prevention planning has already been used before, the directive can “accelerate things in our direction ... support our philosophy ... give us an additional argument to assert our approach within Germany ...” (official from Rhineland-Palatinate). In Rhineland-Palatinate for instance, this concerns the wish to raise risk acceptability, to depart from often binary land-use planning based on HQ100 standards, and to plan statutory flooding policies in a cost-effective manner across all Länder. The hope is that the experiences with risk-based management in the Rhine cooperation can help to harmonize the fragmented regime (officials from the ICPR and Rhineland-Palatinate). In the German case, the EU directive may thus entice internal harmonization around a risk-based approach, which is already applied by some (self-proclaimed) forerunners.

Federal level officials firmly support more coordination and display some intention to centralize German flooding policies: “it will be much more systematic, broader in reach and simpler, hopefully also more comparable eventually”. This chiefly concerns enforcement as well: with the current development of a new national flood protection program, the central government proposes a transformation of financial structures and German flood risk management towards a risk-based model.

The Rhine experience is acknowledged as crucial here⁷. The federal funding pot will use flood risk maps to design risk-based eligibility criteria. For the first time, a nationally coordinated “cross-Länder targeting of financial resources on shared priorities in flood risk management” (official at the Federal Ministry of the Environment) will flank the currently dissolved financial accountability of Länder and municipalities. Such a development would represent a far-reaching “indirect transformation” (Saurugger 2013) toward risk-based financial enforcement enabled by, but going much beyond the scope of, the EU directive.

5 Discussion: beyond the nation-state focus in comparative risk-based governance studies

This paper set out to introduce long-standing insights from Europeanization research to the comparative study of risk-based policy-making. We sought to render the empirical focus on adaption pressures, adaptation processes, and the respective explanations for adaptation from European integration studies as advantageous for the comparative analysis of risk-based governance. We claim that such an analytical cross-pollination is apt to establish whether and how European integration can help overcome well charted national obstacles to the adoption of risk-based thinking. The explorative comparison of Dutch, French, and German flooding policies and their transformation in response to the risk-based requirements of the EU floods directive yields several results. Based on our findings, we now discuss how a Europeanization lens contributes to the conceptual and analytical expansion of – so far rather nation-state focused – risk-based governance studies⁸, and thus enables a more acute acknowledgement and explanation of the mitigating role of European integration.

Firstly, we find that Europeanization can enable the introduction or mainstreaming of risk-based thinking. This was the case in France and Germany, both of which transformed their policy ideas to fit Europe in the hope of applying a more systematic approach to risk assessment across the country. In both cases, national actors used the EU as a venue to induce a desired rationalization, and more importantly, a centralization of flooding policies. In that regard, the paper indicates that there is a strong potential for ‘soft’ EU policies to ease national reluctance to risk-based governance. This was especially so if national players considered EU risk-based policies as a venue for either policy change

⁷ Based on the Dutch Delta program, the ICPR developed a software to simulate risk reduction effects of different combinations of measures. The national flood protection program wants to use this tool to prioritize funding and select those measures with the best cost-benefit ratios.

⁸ There are certainly studies which analyze risk-based strategies at the EU level itself (e.g., Kjaer 2010). What we problematize is the lack of systematic analysis of the interface of national and EU policies in risk-based governance studies.

or a change of the opportunity structures underpinning policy decision-making. These dynamics certainly confirm accounts of venue-shopping (Guiraudon 2000) or the use of the EU as “smokescreen for domestic policy maneuvers” (Buller and Gamble 2002, 17) prevalent in Europeanization literature. Yet, they rather lack systematic consideration in risk-based governance research. As we detail below, this blind spot is partly related to the wide-spread assumption that the adoption of risk-based policies in nation states is predominantly explainable with domestic institutions’ hopes for efficiency and accountability gains (for this critique see Paul and Huber 2015). At the same time, further removed goals such as the procedural re-structuration or concentration of a policy domain, which have been crucial in the French and German cases of flooding policies, remain underexplored as drivers toward risk-based governance.

Secondly, by contrast, even though complying with the risk terminology and risk-based information-gathering of the directive from the start, the Netherlands have remained somewhat inert and even partially retrenched from EU procedures. This somewhat unexpected finding can be explained by the clash between the directive’s reporting and evaluation mechanisms and The Hague’s aspirational policy approach. Our comparison of the Dutch case vis-à-vis the different dynamics in France and Germany forces us to nuance how of EU-compatible actuarial risk assessments trigger high degrees of Europeanization around a risk-based approach. Our analysis demonstrates that Dutch policymakers, while sharing the flood risk terminology and methods of risk assessment proposed by the EU, reject the procedures that are linked to risk-based information gathering. On that basis, they opt for both inertia and a partial retrenchment with regard to EU reporting requirements. This indicates that we ought to reconsider any reliance on headline commitments to risk-based governance, even in member states which seem to cherish such approaches. The shared dedication to conducting actuarial risk assessment does not imply common ideas about the best use of such techniques in policy development.

At the same time, however, the Europeanization lens also requires us to nuance the relationship between ‘soft’ policy tools, which concentrate on the regulatory function of information-gathering and issue framing vs. ‘harder’ impacts on standard-setting and enforcement strategies. In the German case, we found a clear ambition to use risk mapping as a catalyzer for a new national funding scheme. For the first time, municipalities’ eligibility for national subsidies of protection and prevention efforts would be differentiated based on risk. Again, venue-shopping helped explain when and why such a transmission of risk-based policy ideas from information-gathering to financial enforcement was possible.

Finally, our findings expose a highly variable relationship between the ideational and procedural elements of risk-based governance. It highlights that compatibility with EU norms in one case (actuarial risk ideas in the Dutch case) does not necessarily induce a better fit in the other (risk management reporting procedures in the Dutch case). Equally, responses to ideational incompatibilities (French and German risk mapping) can be actively pursued to tackle procedural misfit, and for reasons that have nothing to do with any embrace of the usual efficiency promises of risk-based governance. Indeed, as discussed above, the unifying and ‘colonizing’ power of risk ideas (Rothstein et al. 2006) can also be seized for otherwise desired changes of political opportunity structures and changes of power relations between different players. While some authors have already pointed to the limits of (Anglo-Saxon) competition-based concepts of risk-based governance (Paul and Huber 2015), the strategic use of risk-based thinking for the transformation of procedures and power relationship still seems rather underexplored. Here, risk-based governance researchers can benefit from including in their analyses the vast knowledge of European integration research, especially literature that deals with the strategic uses of the policy interface between Brussels and member states (or even regions).

Of course, the limits of an explorative small-n comparison in one policy domain and three countries prohibit sweeping generalizations. We therefore call for comparative studies in other countries and policy fields to harden our empirical findings on the seemingly important role of European integration for national adoptions of risk-based governance.

Acknowledgements

Research for this paper was supported by a grant awarded through the Open Research Area Programme for the Social Sciences jointly funded by the ESRC (ES/K006169/1), DFG, ANR, and NOW (<http://tinyurl.com/howSAFE-project>). We thank Anne-Laure Beaussier, Olivier Borraz, David Demeritt, Michael Huber, Vera Linke and Henry Rothstein for comments on earlier versions, and Jacob Reilley for thorough language editing.

References

- Ale, Ben. 1988. “*Risk Analysis and Risk Policy in the Netherlands*.” Paper presented at the meeting of the European Section of the Society for Risk Analysis, 10-11, Laxenburg, Austria
- Allemeyer, Marie L. 2006. “*Kein Land ohne Deich...!*”. *Lebenswelten einer Küstengesellschaft in der Frühen Neuzeit*. Göttingen: Vandenhoeck & Ruprecht.
- Bijker, Wiebe. 2007. “American and Dutch Coastal Engineering: Differences in Risk Conception and

- Differences in Technological Culture.” *Social Studies of Science* 37(1): 143-151
- Bijker, Wiebe. 1993. Dutch, dikes and democracy: An argument against democratic, flexible, good and bad technologies. Technology Assessment Texts 11. Lyngby, DK: Unit of Technology Assessment, The Technical University of Denmark.
- Börzel, Tanja A. 2008. “Environmental Policy.” In *Europeanization. New Research Agendas*, edited by Paolo Graziano and Maarten P. Vink, 226–38. Basingstoke: Palgrave MacMillan.
- Börzel, Tanja A., and Thomas Risse. 2003. “Conceptualizing the Domestic Impact of Europe.” In *The Politics of Europeanization*, edited by Kevin Featherstone and Claudio M. Radaelli, 57–80. Oxford: Oxford University Press.
- Buller, Jim, and Andrew Gamble. 2002. “Conceptualising Europeanisation.” *Public Policy and Administration* 17 (2): 4–24. doi:10.1177/095207670201700202.
- Bulmer, Simon. 2008. “Theorizing Europeanization.” In *Europeanization. New Research Agendas*, edited by Paolo Graziano and Maarten P. Vink, 46–58. Basingstoke: Palgrave MacMillan.
- Caporaso, James. 2008. “The Three Worlds of Regional Integration Theory.” In *Europeanization. New Research Agendas*, edited by Paolo Graziano and Maarten P. Vink, 23–34. Basingstoke: Palgrave MacMillan.
- Council of the European Union [CEU]. 2007. *Council Directive on the Assessment and Management of Flood Risks*. Number 2007/60/EC. Brussels.
- Council of the European Union [CEU]. 1998. *Council Directive on the Protection of the Health and Safety of Workers from the Risks Related to Chemical Agents at Work*. Number 98/24/EC. Brussels.
- Demeritt, David, Beaussier, Anne-Laure, Boudier, Frédéric, Paul, Regine and Mara Wesseling. 2015. “Making space for failure? Governing flood risks in Europe”. *HowSAFE working papers*, no. 3, London: King’s College.
- Dyson, Kenneth. 2008. “Economic Policy.” In *Europeanization. New Research Agendas*, 281–94. Basingstoke: Palgrave MacMillan.
- Falkner, Gerda. 2008. “Social Policy.” In *Europeanization. New Research Agendas*, edited by Paolo Graziano and Maarten P. Vink, 253–65. Basingstoke: Palgrave MacMillan.
- Featherstone, Kevin, ed. 2003. *The Politics of Europeanization*. Oxford: Oxford University Press.
- Goetz, Klaus H. 2001. “European Integration and National Executives: A Cause in Search of an Effect?” In *Europeanised Politics?: European Integration and National Political Systems*, edited by Klaus H. Goetz and Simon Hix, 211–30. Routledge.
- Green Cowles, Maria, Caporaso, James and Thomas. 2001. *Transforming Europe: Europeanization and Domestic Change*. New York: Cornell University Press. Guiraudon, Virginie 2000. “European Integration and Migration Policy: Vertical Policy-Making as Venue Shopping.” *Journal of Common Market Studies* 38 (2): 251–71.
- Haverland, Markus. 2003. “The Impact of the European Union on Environmental Policies.” In *The Politics of Europeanization*, edited by Kevin Featherstone and Claudio Radaelli, 203–24. Oxford: Oxford University Press.
- Huisman, Pieter, de Jong, Joost and Koos Wieriks. 2000. “Transboundary Cooperation in Shared River Basins: Experiences from the Rhine, Meuse and North Sea.” *Water Policy* 2 (1-2): 83–97. doi:10.1016/S1366-7017(99)00023-9.
- Jongejan, Ruben. 2008. “How safe is safe enough? The government’s response to industrial and flood risks.” PhD thesis.
- Kallestrup, Morten. 2002. “Europeanisation as a Discourse: Domestic Policy Legitimation through the Articulation of a ‘Need for Adaptation.’” *Public Policy and Administration* 17 (2): 110–24.

doi:10.1177/095207670201700207.

- Kjaer, Poul F. 2010. *Between Governing and Governance. On the Emergence, Function and Form of Europe's Post-National Constellation*, Oxford: Hart Publishing.
- Krieger, Kristian. 2011. "Putting Varieties of Risk-Based Governance in Institutional Context: The Case of Flood Management Regimes in Germany and England in the 1990s and 2000s." London: King's College London.
- . 2013. "The Limits and Variety of Risk-Based Governance: The Case of Flood Management in Germany and England." *Regulation & Governance* 7 (2): 236–57. doi:10.1111/rego.12009.
- Länderarbeitsgemeinschaft Wasser [LAWA]. 2013. *Empfehlungen zur Aufstellung von Hochwasserrisikomanagementplänen*. Dresden.
- Langumier, Julien. 2012. *La directive européenne Inondation: une nouvelle géographie du risque en rupture avec la politique territorialisée de prévention – communication au séminaire 'catastrophe et risque' – CERI – 14 December 2012*.
- Ledoux, Bruno. 2006. *La gestion du risque inondation*, Paris: Lavoisier
- Lehmkuhl, Dirk. 2008. "Some Promises and Pitfalls of Europeanization Research." In *Europeanization. New Research Agendas*, edited by Paolo Graziano and Maarten P. Vink, 337–53. Basingstoke: Palgrave MacMillan.
- Lodge, Martin. 2011. "Risk, Regulation and Crisis: Comparing National Responses in Food Safety Regulation." *Journal of Public Policy* 31 (01): 25–50. doi:10.1017/S0143814X10000218.
- Löfstedt, Ragnar. 2011. "Risk versus hazard assessment – how to regulate in the 21st century: two case studies." *European Journal of Risk Regulation* 2(2): 149-168.
- Martini, Frédérique. 2007. Le programme d'action de l'union européenne pour la gestion européenne du risque d'inondation, In *Bilan et nouvelles perspectives en droit national et en droit comparé, Actes du colloque national de la société française pour le droit et l'environnement*, edited by Direction Générale de la Prévention et des Risques, La Prévention des Risques Naturels, , Biarritz 8-9 November 2007.
- Mörth, Tanja A. 2003. "Europeanization as Interpretation, Translation and Editing of Public Policies." In *The Politics of Europeanization*, edited by Kevin Featherstone and Claudio M. Radaelli, 159–78. Oxford: Oxford University Press.
- Mostert, Erik. 2009. "International Co-Operation on Rhine Water Quality 1945–2008: An Example to Follow?" *Physics and Chemistry of the Earth, Parts A/B/C*, no. 3: 142–49. doi:10.1016/j.pce.2008.06.007.
- National Research Council (NRC).1983. *Risk Assessment in the Federal Government: Managing the Process*. Washington DC: National Academy Press.
- Palier, Bruno and Yves Surel, eds. 2007. *L'Europe en action. L'eupéanisation dans une perspective comparée*. Paris: l'Harmattan.
- Paul, Regine, and Michael Huber. 2015. "Risk-Based Regulation in Continental Europe? Explaining the Corporatist Turn to Risk in German Work Safety Policies." *HowSAFE Working Papers*, no. 2, London: King's College.
- Pfister, Gerhard, and Renn, Ortwin, eds. 1997. Reports on risk regulation procedures in several countries, introduction to discussion paper No. 91, Stuttgart: Akademie für Technikfolgenabschätzung in Baden-Württemberg.
- Power, Michael. 2004. *The Risk Management of Everything: Rethinking the Politics of Uncertainty*. London: Demos.
- Radaelli, Claudio M. 2003. "The Europeanization of Public Policy." In *The Politics of Europeanization*, edited by Kevin Featherstone and Claudio M. Radaelli, 28–56. Oxford: Oxford University Press.

- Radaelli, Claudio M., and Sabine Saurugger, eds. 2008. "The Europeanization of Public Policies: New Research Directions." *Journal of Comparative Policy Analysis*, 10 (3).
- Rode, Sylvain. 2008. "La prévention du risque d'inondation, facteur de recomposition urbaine ? L'agglomération de Blois et le déversoir de la Bouillie." *L'information géographique* 72(4).
- Rothstein, Henry, Olivier Borraz, and Michael Huber. 2013. "Risk and the Limits of Governance: Exploring Varied Patterns of Risk-Based Governance across Europe." *Regulation & Governance* 7 (2): 215–35. doi:10.1111/j.1748-5991.2012.01153.x.
- Rothstein, Henry, Michael Huber, and George Gaskell. 2006. "A Theory of Risk Colonization: The Spiralling Regulatory Logics of Societal and Institutional Risk." *Economy and Society* 35 (1): 91–112. doi:10.1080/03085140500465865.
- Royal Society. 1983. *Risk Assessment. A Study Group Report*. London: The Royal Society
- Saurugger, Sabine. 2013. *Theoretical Approaches to European Integration*. London: Palgrave MacMillan.
- Van Dantzig, David. (1956) "Economic decision problems for flood prevention". *Econometrica* 24:276-287.
- Vink, Maarten P., and Paolo Graziano. 2008. "Challenges of a New Research Agenda." In *Europeanization. New Research Agendas*, 3–20. Basingstoke: Palgrave MacMillan.