

Transboundary Flood Risk Management

Transboundary Flood Risk Management: Compatibilities of the Legal Systems of Flood Risk Management in the Netherlands, Flanders and France – A Comparison

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Abstract

In the EU the Flood Directive is part of the European legislation which is implemented in the domestic legal regimes of the Member States. The legal systems in which flood risks are managed are part of the domestic legal regimes. Floods in the European river basins of the the Scheldt and the Meuse are a special case, for they have transboundary consequences. Therefore, the flood risk management of the countries which are part of these river basins need to be compatible in order to prevent or mitigate transboundary floods risk. However, knowledge of the competences of relevant administrative authorities and the legal instruments for preventive flood risk management is lacking. Without this knowledge it is impossible for the member states to establish a balanced system in which transboundary flood risks are well managed . This article is the first step to provide a basis for such a cooperation by reducing this knowledge gap for the three countries which are part of the river Meuse and the Scheldt – the Netherlands, Flanders and France. It offers a comparison of the consequences of policy making and implementation of specific measures by describing the actors and their legal instruments. The two specific aspects of flood risk management are selected because they form the core of the system in which flood risk management is implemented and are necessary for the realisation of measures to prevent or reduce flood risks.

I. Introduction

European law imposes environmental obligations on the Member States, but does not touch upon the autonomy of their administrative organisation. Especially in the field of the environment – and, more specifically, in the field of water management – cooperation between Member States is crucial to satisfy the European standards laid down in directives.

Water does not follow (legal) boundaries and is a pre-eminent example of a policy domain where

transboundary cooperation is necessary due to the existence of many transboundary river basins. This article focuses on a specific aspect of water management: flood risk management. Large-scale floods are a recurring phenomenon in Europe. To prevent and reduce them, the Floods Directive (FD)¹ was adopted by the European Council in 2007. Obliging EU Member States to establish a system of flood risk management, the FD is a “framework directive”, consisting of a set of obligations ranging from policy instruments to legal instruments which each Member State has to implement and embed into its legal system. As laid down in the EU Treaty, powers must be exercised as close to the citizen as possible. Only when the objectives of the FD cannot be sufficiently achieved can the Community take measures, in accordance with the subsidiarity principle (rec 23 preamble FD). Rec. 13 makes clear that the way flood risk management is shaped very much depends on the physical characteristics of the area. Therefore flood risk management can be seen as a task which should be dealt with at the level of the Member States instead of at the EU level. Nevertheless, cooperation between Member States is crucial for flood risk management, because all measures can influence the water system downstream and in some cases upstream as well.

As flood-risk management strategies are defined differently in literature, it is important to start with definitions. This article uses the following two relevant definitions of the FD:

“Prevention: preventing damage caused by floods by avoiding construction of houses and industries in present and future flood-prone areas; by adapting future developments to the risk of flooding; and by promoting appropriate land-use, agricultural and forestry practices;

Protection: taking measures, both structural and non-structural, to reduce the likelihood of floods and/or the impact of floods in a specific location.”²

In the Communication of the Commission, the concept of mitigation is addressed as well. Looking at the above strategies, mitigation would fall within the “protection” strategy.

Considering the above, the way Member States design their flood risk management can influence the flood risks of riparian states, especially in the case of transboundary rivers, such as the Meuse and the Scheldt. Three countries share both river basins: the Netherlands, Belgium and France. In Belgium the three federal entities (Flanders, Wallonia and the Brussels Capital Region) have developed their own flood risk management system with their own set of

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¹ 2007/60/EC.

² COM(2004)472 final.

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competences and instruments. For the sake of comparison, Flanders is the territorial unit of analysis.

It has been investigated whether the FRM systems of France, Flanders and the Netherlands include the legally embedded obligations required by the FD.³ However, in-depth research which identifies and compares the main competences and legal instruments of flood risk management in these countries has not yet been carried out, although, for a successful cooperation, knowledge of the national administrative and legal context is just as important as knowledge of national physical and geographical factors.

This article aims to address the competences and the legal instruments of FRM within the context of Dutch, Flemish and French administrative law by describing the three systems and making a comparison. The main research question is the following:

What are the main competences, responsibilities and legal instruments of authorities regarding preventive and protective flood risk management measures in the Netherlands, Flanders and France?

The comparison focuses on three general themes that can be distinguished in all studied countries. The first theme concerns *the centralised versus decentralised divide* in the countries. Water management is a policy domain that touches other environmental policy fields. Especially the connection with *spatial planning* is relevant for flood prevention. Therefore, the relation between flood risk management and spatial planning is the second theme. The third theme focuses on the *public-private divide*. This theme consists of different aspects, such as who bears responsibility for flood protection and funding aspects.

An analysis of the three general themes in Flood risk management (s. 6) is based on comparison of these themes (s. 5). This requires a description of the competences (s. 3) and legal instruments (s. 4) on the various levels of water law in the three countries concerned, because flood risk management is embedded in the administrative structure of competences and the legal instruments of competent authorities.

The main aims and requirements of the Floods Directive see on a more integrated approach of flood risk management, which include not only flood protection, flood prevention and preparation but also close cooperation between Member States in order to be solidary by not shifting the problem of flood risks from one area to another. In order to achieve these aims and requirements compatible flood risk management regimes are necessary. This article shows that despite the large differences between the three regimes, they can exist together and learn from each other (s. 7).

II. Method

This article is a legal comparison of flood risk management in the Netherlands, Flanders and France.

As Ancel stated, a legal comparison can be conducted on three levels, the level of a legal rule (1), the level of a legal institution (2) or the level of a legal regime (3).⁴ This study combines the second and the third level. It studies the legal regime of flood risk management by looking closely to the different legal institutions that are relevant in the flood risk management regimes.

The comparison combines the dogmatic and functional approach.⁵ The dogmatic aspects relate to legal documents (legislation, case law and legal literature). In this article an in-depth analysis of primary and secondary legal sources has been conducted. It contains a study of legislation of national government, decentralised legislation, guidance and policy documents, case law to gain a comprehensive overview of the legal system of the three countries.

The functional approach leans on the proposition that all legal systems faces essentially the same problems, and solves this problems differently, although in most cases with the same results.⁶ In all three countries, flood risk management has been developed and competences and legal instruments are present to implement and realise measures. Therefore, the “problem” defined in this article is the legal design of Dutch, Flemish and French flood risk management.

Part of a legal comparison is the to establish a report for each legal system, which is free from any critical evaluation. This forms the basic material, necessary for the comparison that follow the description.⁷ Section 3 and 4 of this article can be considered to be such a country report on flood risk management. These two sections are rather extensive but necessary to understand the following comparison and analysis.

Selection of regimes. The scope of the research is firstly delimited by the river basin approach of the Floods Directive. The geographical scope is the river basin district op the river Meuse and Scheldt. In the river basin district of the Meuse, five countries are included: France, Luxembourg, Belgium (the Walloon Region, Brussels Capital Region and Flanders), Germany and the Netherlands. The Scheldt river basin contains France, Belgium (the Walloon Region and Flanders) and the Netherlands. Because Germany, Luxembourg and the Brussels Capital Region are only of interest for the Meuse river basin, they are not part of the study.

³ Sally Priest *et al.*, *The European Union Approach to Flood Risk Management and Improving Societal Resilience: Lessons from the Implementation of the Floods Directive in Six European Countries*, Ecology and Society.

⁴ M Ancel, *Utilité et Méthodes Du Droit Comparé* (Editions Ides et Calendes 1971) 99–101.

⁵ F Gorlé *et al.*, *Rechtsvergelijking* (E Story-Scientia 1991) 28.

⁶ Konrad Zweigert, Hein Kötz (trans. Tony Weir), *An Introduction to Comparative Law* (3rd edn, Clarendon Press 1998) 34.

⁷ *Ibid* 43.

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The second delimitation of the scope is the principle of equality before the public burdens (*égalité devant les charges publiques*), because this article is part of a larger research on the relevance of this principle in pre-flood compensation regimes.⁸ The principle is present in the Netherlands and France. In Belgium Flood risk management is a regional task. Therefore, three distinct flood risk management governance arrangements can be defined. However, the *égalité* principle is not accepted in the Walloon Region and Brussels Capital Region.. This confines the selected countries to the Netherlands, Flanders and France.

and improve the environment. Responsibility for protection against flooding as well as the protection of water quality is thereby provided. These responsibilities are divided among different public authorities.

The Dutch governmental system is divided into three levels: the national level, the regional level and the local level. Figure 1 shows the main authorities per level. An important notion is the fact that municipalities and regional authorities fall under the provinces and are of equal decentral level. At the local

III. Competences

3.1 The Netherlands

Article 21 of the Dutch Constitution obliges public authorities to keep the country habitable and to protect

⁸ Willemijn van Doorn-Hoekveld, “Compensation in Flood Risk Management with a Focus on Shifts in Compensation Regimes Regarding Prevention, Mitigation and Disaster Management” [2014] *Utrecht Law Review*; Willemijn van Doorn-Hoekveld *et al.*, “Distributional Effects of Flood Risk Management—a Cross-Country Comparison of Pre-flood Compensation” [2016] *Ecology and Society*.

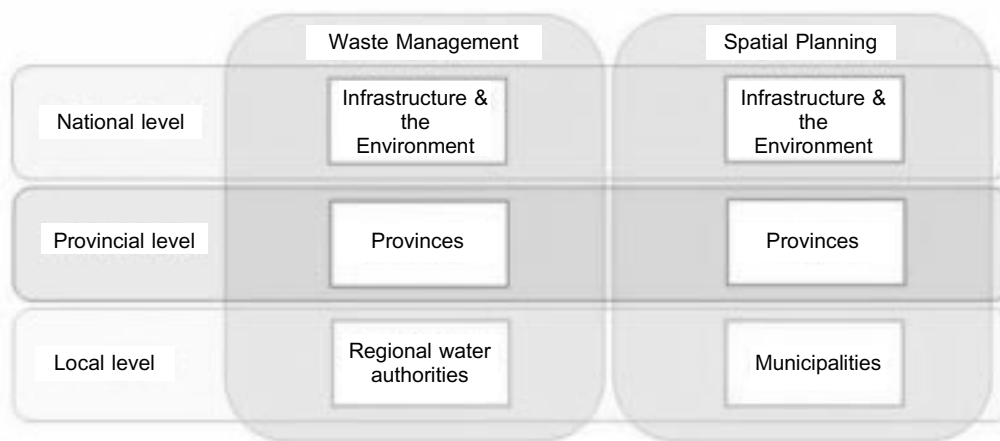


Figure 1: General division of governmental levels between water management and spatial planning.

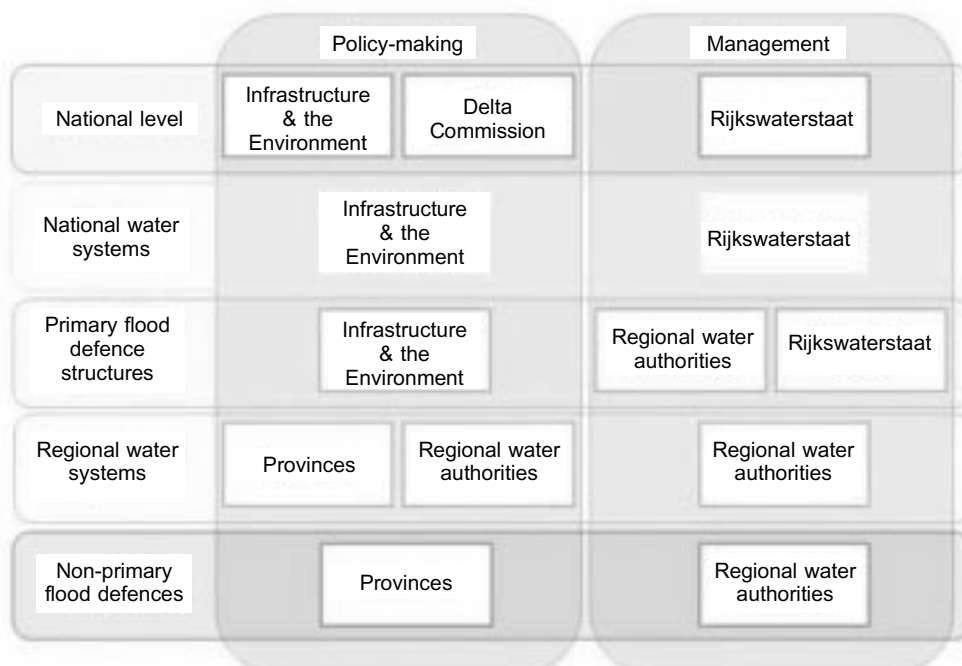


Figure 2: Division of competences for policy-making and the management of flood risks.

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level, the strict division between water management and spatial planning is visible.

In the field of water management different actors are relevant (Figure 2)

The Ministry of Infrastructure and the Environment is, among other things, responsible for policy regarding all facets of water management and spatial planning. The minister is responsible for the supervision of all primary flood defence structures. The Delta Commissioner comes under the Ministry of Infrastructure and the Environment, but has been assigned specific tasks in the Water Act.⁹ Rijkswaterstaat is the national executive body for public works and water management and is responsible for the management of tasks assigned to the Minister of Infrastructure and the Environment, including, among other things, infrastructure, the construction, management and maintenance of water management structures, granting water permits and enforcing statutory and other rules regarding the main water system.¹⁰

The regional water authorities are primarily responsible for the management of primary flood defence structures, with the exception of the *Afsluitdijk* (the IJsselmeer Dam), the *Oosterscheldekering* (the Oosterscheldt storm surge barrier) and the *Maeslantkering* (the Maeslant storm surge barrier), which are the responsibility of the national water authority (*Rijkswaterstaat*).

Even though they have not been designated as water managers under the Water Act, the provinces and municipalities also have tasks concerning water management. They are charged with supervising the regional water authorities and the municipalities as well. Supervision makes it possible for a higher administrative authority to exercise mandatory influence on a lower administrative authority.¹¹

As stated above, the division of flood risk management tasks and spatial planning tasks is strict. The provinces and municipalities both are relevant actors in the field of spatial planning.

The ownership of waters and the riparian zones is another aspect. According to article 5:27 CC the ground below public water bodies is, more likely than not, owned by the State. The ground below non-public waters (ditches or a small non-navigable water course) can be owned by private parties. However, the surface water itself is not owned by any legal subject.¹²

Although a riparian zone can be owned or possessed by private parties,¹³ one of the water managers is responsible for the maintenance of the flood defence structure and the protection zone. So the owner does not have any responsibility regarding flood risk management.

Concluding remarks

At the central level, the main flood risk management strategies are created. The Dutch even have a so-called Delta Commissioner in existence to protect flood risk management. There is a strict distinction between the

authorities which are responsible for policy-making and the water managers which are responsible for management, even though the latter are (informally) involved in policy-making as well. All authorities involved in water management at the regional level are democratically elected bodies, which do have clear-cut tasks.

The policy domains of spatial planning and water management are in the hands of different authorities, and only the central government and the provinces have competences in both fields.

Citizens do not have their own responsibility concerning the prevention or mitigation of flood risks. However, it can be problematic when land that is needed for flood risk management purposes is in some cases owned by private parties.

3.2 Flanders

Flood risk management in Flanders has another division than in the Netherlands. The division of competences depends on the function of the watercourse. They can be navigable or non-navigable.

In general, specific departments are the policy-making divisions of the administration and the agencies are responsible for the realisation of policy and (water) management. However, there is close cooperation between the departments and the agencies when it comes to FRM, since agencies give their opinion on future policy and evaluate current policies in their field of expertise.¹⁴

The Department of Mobility and Public Works is responsible for navigable watercourses.¹⁵ The *de facto*

⁹ Chapters 3.1a, 4a and 7.4a, together they are called the Delta Act.

¹⁰ The competences are laid down in the Water Act.

¹¹ Helena FMW van Rijswijk and HJM Havekes, *European and Dutch Water Law* (Europa Law Publishing 2012) 197; AM Keessen *et al.*, "The Concept of Resilience from a Normative Perspective: Examples from Dutch Adaptation Strategies" (2013) 18 *Ecology and Society* 45; M Kaufmann *et al.*, *Analysing and Evaluating Flood Risk Governance in the Netherlands. Drowning in Safety* (STAR-FLOOD Consortium 2016).

¹² Asser/FHJ Mijnsen, AA van Velten and S Bartels, *Mr. C. Assers Handleiding Tot de Beoefening van Het Nederlands Burgerlijk Recht. 5*. Zakenrecht. Deel III Eigendom* (15th edn, Kluwer 2008) 133.

¹³ In Dutch private law, it is important to distinguish "ownership" ("eigendom") from "possession" ("bezit"). Legal ownership is the most comprehensive entitlement one could have with regard to an object (Article 5:1(1) CC). Possession means that someone retains an object for his or her own benefit (Article 3:107(1) CC). Possession and ownership of an object do not necessarily have to be vested in one (legal or physical) person; a person may own an object, while another possesses it.

¹⁴ www.vmm.be, accessed 16 November 2016.

¹⁵ According to the Court of Cassation, navigable watercourses can support ships or fleets (19 December 1955, Pas. 1956, 382).

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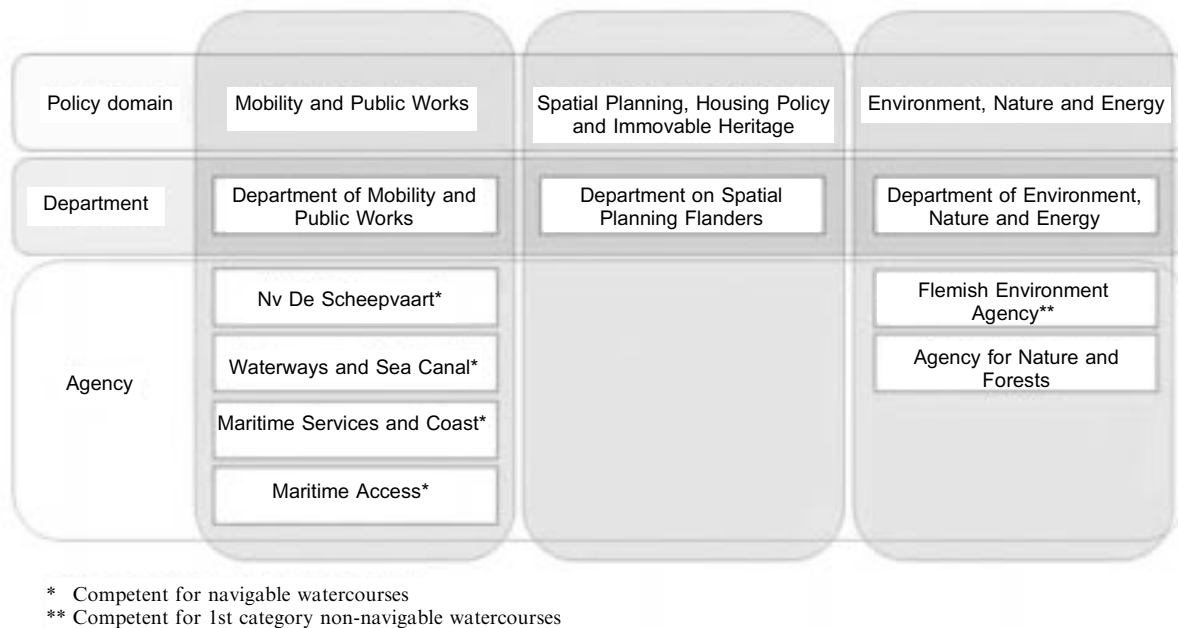


Figure 3: Competent authorities

management of watercourses lies in the hands of four agencies.¹⁶

Another water manager is the Flemish Environmental Agency (FEA, *Vlaamse Milieumaatschappij*), which is responsible for the first category of non-navigable watercourses.¹⁷

The second category of non-navigable watercourses are managed by the Provinces¹⁸ and the third category are managed by the municipalities.¹⁹

In the Decree Integrated Water Policy (DIWP) a new authority has been introduced: the Coordination Committee on Integrated Water Policy (CIW).²⁰ This authority is responsible for the preparation, planning, the supervision and the following up of integrated water policy; it oversees the uniform approach of the sub-river basins (*bekkenwerking*) and is responsible for the realisation of decisions by the Flemish government regarding integrated water policy. The FEA is responsible for the secretariat and administrative support for the planning department of the committee. Because the CIW is responsible for the policy-making concerning all integrated water management issues, their influence also extends to navigable and non-navigable watercourses. However, the CIW is not involved in concrete measures or projects at the aforementioned levels. Representatives of the provinces, municipalities and the polders and wateringues are members of the CIW.

Even though they do not have formal competences regarding flood risk management, the Department of Spatial Planning is also consulted during the process of policy-making concerning flood risk management.

Although it is not a water manager, the Flemish Land Agency (*Vlaamse Landmaatschappij*) is an important actor as well. It is responsible, amongst

other things, for the expropriation of necessary land for the realisation of the Sigma Plan (see s. 3.2). The Flemish Land Agency is part of the policy domain of Environment, Nature and Energy.

In Flanders, the ground below navigable watercourses is considered to belong to the water manager. The navigable watercourses belong to the public domain.²¹ For non-navigable watercourses, the riparian zone can be privately owned.²² The management of these areas is the responsibility of the water manager, also in the case an area is privately owned.

Concluding remarks

Many policy domains are involved in Flemish flood risk management. This leads to a fragmentation of competent authorities. There is no strict separation

¹⁶ Waterways and Sea Canal (*Waterwegen en Zeekanaal*), De Scheepvaart, the Agency for Maritime Services and the Coast (*Agentschap Maritieme Dienstverlening en Kust*), and Maritime Access (*Afdeling Maritieme Toegang*).

¹⁷ The first category of non-navigable watercourses are downstream from the point where their basin is at least 5,000 hectares (Article 2, subsection 1 and 7§1 Non-navigable watercourses Act of 28 December 1967).

¹⁸ Watercourses which are neither of the first nor of the third category (Article 2, subsection 2 and 7§2 Non-navigable watercourses Act).

¹⁹ Small watercourses with a basin less than 100 hectares (Article 2 subsection 3 and 7§3 Non-navigable watercourses Act). In 2014, most of these watercourses have been transferred to the sphere of competence of the provinces.

²⁰ Article 25 DIWP.

²¹ Art. 538 Civil Code.

²² Art. 644 Civil Code.

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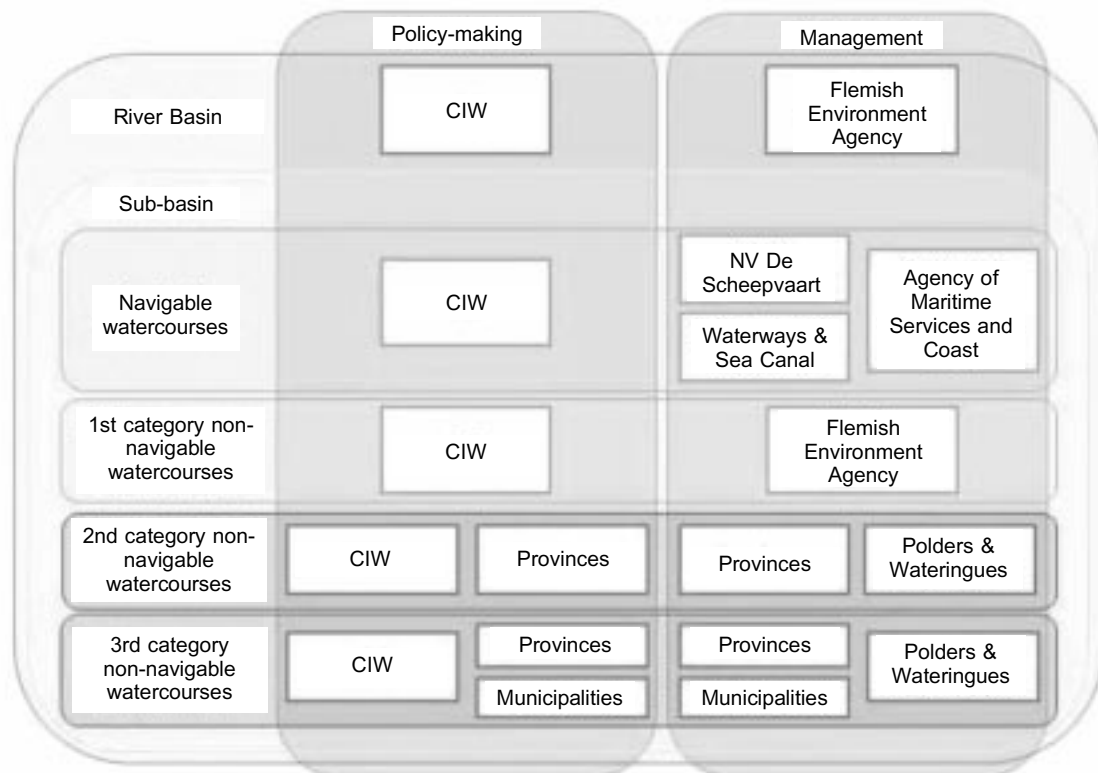


Figure 4: Division of competences for policy-making and the management of flood risks.

between the policy-making and management tasks, e.g. because the CIW is closely connected to the FEA. The central body, the CIW, is responsible for the governance of all water systems; however, all stakeholders are part of the CIW, so one cannot say that the division between central and decentralised authorities is very strict.

3.3 France

In France we find a strict division of governmental levels. The central level being the most important one, albeit many flood risk management tasks are laid down at the local level.

The Ministry of Environment is the most important central ministry regarding flood risk management. It is the most important actor in implementing the FD and has the most important powers regarding crisis management.

The Ministry of Economy and Finance is responsible for regulating the CATNAT system and the Barnier Fund.²³

The Joint Flood Commission (*Commission Mixte Inondation*) is not a governmental body, but a consultative body which consists of all stakeholders (the government, elected authorities, *Établissements Publics Territorial de Bassin* (EPTB), insurers, and civil society). The Commission has cooperated in the creation of the national flood risk management strategy. It also examines the submitted proposals

for *Programmes d'action de prévention des inondations* (PAPIs) and *Plans de Submersions Rapides* (PSRs).²⁴

The regions (*régions*) are one of the three local authorities in France. The *préfet* (prefect) is the state representative, and should ensure that all national legislation is applied in the region. The region is responsible for transport and infrastructure. Therefore it provides funding for infrastructural works for flood protection.²⁵

The departments (*Départements*) are also one of the three local authorities. The prefect is the state representative at the local level. Departments are contracting authorities for flood defence structures such as dikes.

In France, the mayor and the prefect of the department are solely responsible for managing risks in terms of prevention and crisis management.²⁶

Another important authority is the *Direction régionale et Interdépartementale de l'environnement, de l'aménagement et du logement* (DRIREAL), a decentralised department of the Ministry of Environment. The prefect of the region coordinates flood risk

²³ See section 43 (Instruments).

²⁴ *Ibid.*

²⁵ OECD, "Seine Basin, Île-de-France, 2014: Resilience to Major Floods" (2014) 84.

²⁶ *Ibid.* 79.

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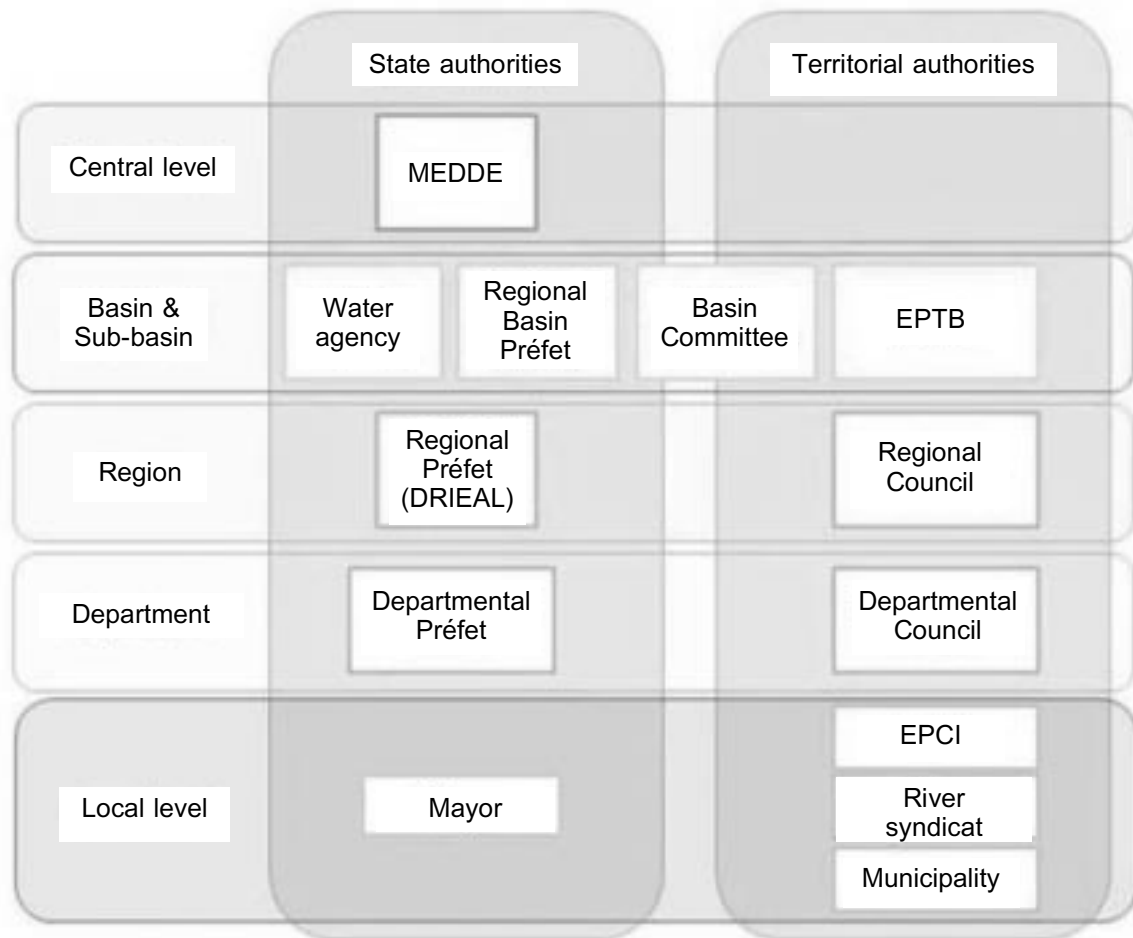


Figure 5: The administrative levels on which the competent authorities operate.²⁷

prevention policies. Therefore the DRIEAL is a key player in implementing the European Floods Directive.

Municipalities (*Communes*) are the third kind of local authorities. Every municipality has a mayor (*maire*), who has a three-fold task: he acts as the municipal executive, as the state representative and he exercises his specific powers.²⁸ Municipalities have a general responsibility for protecting their citizens, including against flood risks. Urban development falls under the competence of the municipalities. Therefore they are very important when it comes to reducing the risk of flooding in urban areas.

Figure 5 shows how the central government is involved at every decentralised administrative layer. Therefore, the central state can influence decision-making at lower levels and also make sure that its policy is implemented correctly.

Figure 6 shows the division between competences. It makes clear that policy-making is a central government task, at lower administrative levels, the authorities are responsible for implementing the policy made at the central level.

The Ministry of Housing and Planning is responsible for regional development and planning.

The enactment of the so-called MAPAM law²⁹ in 2014 resulted in a wave of decentralised water management in France. This act divested water management competences to the municipalities, which can delegate these competences to an *établissement public de coopération intercommunale* (EPCI) or other public corporations, e.g. a public territorial basin organisation at the level of the river basin (EPTB) or a local water management organisation at the sub-basin level (EPAGE).³⁰ The MAPAM provides the municipalities and the EPCIs with their own tax jurisdiction so that they now have the ability to impose a tax to

²⁷ Source: C Larrue *et al.*, *Analysing and Evaluating Flood Risk Governance in France: From State Policy to Local Strategies* (STAR-FLOOD Consortium 2016) 15.

²⁸ Walther Cairns and Robert McKeon, *Introduction to French Law* (Cavendish Publishing Limited 1995) 127–128.

²⁹ Modernization of public action and for the affirmation of metropolitan areas (27-01-2014)

³⁰ Art. L.211-7 (1, 2, 5 and 8) Environmental Code. The established responsibility for water management is called “GEMAPI” (*gestion des milieux aquatiques et de prévention des inondations*).

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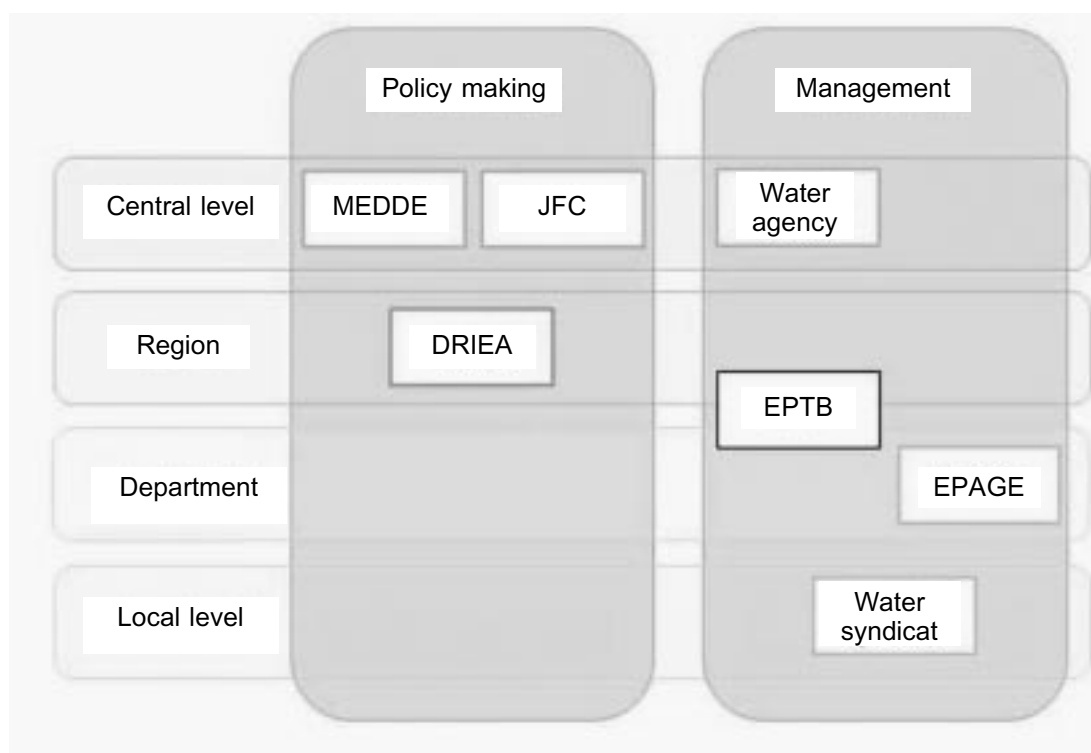


Figure 6. The division between policy-making competences and the management of FRM.

fund to finance any necessary work to reduce flood risks and to compensate losses caused by floods.

Administrative public corporations (*Etablissements publiques*) are established by Parliament based on Article 34 of the Constitution. The main aim of such public corporations is to fulfil a specific public task. Therefore they have autonomy: they have financial resources, and rights and obligations. For instance, they may expropriate and impose levies.

Water agencies (*agences de l'eau*) are public cooperation bodies at the level of river basins. In France, six water agencies exist. They fall under the responsibility of the Minister of Environment and are responsible for implementing the Water Framework Directive but not for flood risk management. They can be considered to be funding agencies. The flood assessment and the preparation of management plans are the responsibility of the six Regional Basins Prefects.³¹

Another public cooperation body is the *Établissements Publics Territorial de Bassin* (EPTB), a local sub-river basin authority, which is a flood risk management institution.³²

An EPAGE is another kind of public cooperation body. It is the direct contracting authority for studies and the realisation of water and flood risk management.

Yet another water institution is the water syndicate (*syndicat des eaux*). The establishment of a syndicate is more or less voluntary and consists of a grouping of territorial communities. They are mostly established to address a specific aspect of water management (e.g. wastewater, flood prevention).

The actual ownership of water and soil are subject to different legal regimes. Water is a public good (*res communis*) and belongs to nobody, but soil can be private property. Major rivers are classified as being in the public domain and consequently their beds are state-owned. For other watercourses the owners of the banks are the owners of the river beds as well.³³

Landowners have the right to protect their land, but the state may build flood defences on the beds of the main rivers for the public interest as well.³⁴ Flood defences can be privately owned, as well as being owned by the state. The owner of a flood defence system is responsible for its maintenance, but private owners may contractually transfer the maintenance obligation to a manager.³⁵ A difficulty is the fact that approximately 33 per cent of flood defences do not have a known owner (orphan dikes).³⁶ There is

³¹ Bernard Barraqué, "The Common Property Issue in Flood Control through Land Use in France" [2014] *Journal of Flood Risk Management*, 8.

³² However, it can also be river-based, e.g. for the River Loire, OECD (n. 20).

³³ *Ibid* 18; Norbert Foulquier, *Droit Administratif Des Biens* (2nd edn, LexisNexis 2013).

³⁴ Susana Goytia *et al.*, "Dealing with Change and Uncertainty within the Regulatory Frameworks for Flood Defense Infrastructure in Selected European Countries" (2016) 21 *Ecology and Society* 23.

³⁵ *Ibid*.

³⁶ Chantal Cans *et al.*, *Traité de Droit Des Risques Naturels* (Le Moniteur 2014); S Deliancourt, "La Détermination de

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currently a shift towards more public responsibility for flood protection. Every ten years a risk study must be carried out for existing flood defences as well as for areas in which flood defences might be built. However, currently the responsibilities for flood protection are laid down at the lowest level (municipalities, public cooperation's, and even citizens), albeit the central state still wants to have much influence in flood risk management by means of the prefects that are present at every decentral level.

Concluding remarks

Even though a decentralisation trend is in progress, the central state does have much influence at the local level, by having a central state organ at every local level: the prefect is responsible for approving measures. It is rather confusing that water management tasks at the local level can be delegated to different kinds of public cooperation's (EPCI or EPTB). Also the water syndicate is a form of voluntary cooperation at the local level. The connection between spatial planning and flood risk management is guaranteed in the sense that both tasks lie with the same authority: the municipality. Citizens do have their own responsibility, e.g. they have the right but not the obligation to protect themselves from flooding. Because flood defences can be privately owned, problems arise because it is not always clear who is responsible for maintenance.

3.4 A Preliminary Comparison of the Competences

In France we find a strong influence by the central state that penetrates into the decentralised authorities by having a state representative in all local entities (the prefect). Even though the Netherlands and Flanders do not have such a phenomenon, in all three countries general flood risk policy is developed at the level of the state and supervisory competences exist. All countries have a specific authority at the central level (the Dutch Delta Commissioner, the Flemish Commission for Integrated Water Management and the French Joint Flood Commission) that is responsible for implementing a general flood risk management strategy.³⁷

The studied countries have in common that there are specific public authorities (regional water authorities in the Netherlands, the FEA, *polders and wateringues* in Flanders and the EPTBs, EPAGES and water syndicates in France) that serve water interests. The legally enshrined tasks of these bodies greatly differ. In the Netherlands, the regional water authorities have their own legally embedded tasks and responsibilities, just as the FEA in Flanders. The EPTBs, EPAGES and water syndicates are more voluntary cooperation organisations, whose existence depends on the delegation of tasks of municipalities. All of the water management bodies mentioned above are separated from spatial planning authorities. The latter are all at a decentralised level (provinces and municipalities in the Netherlands and Flanders and

municipalities in France). However, in Flanders and France the provinces (Flanders) and municipalities (Flanders and France) do have tasks concerning flood risk management.

In the Netherlands, citizens do not have their own responsibility for flood protection; indeed, the duty of the state to keep the country habitable is constitutionally enshrined. To the contrary, in France citizens have a right, but not an obligation to protect themselves. Flood defences can be privately owned and the owner must even take care of the maintenance of flood defences.

IV. Instruments

In this section the most important legal instruments to prevent or reduce flood risks are addressed. The description does not follow the structure of the themes, because some instruments overlap different themes and some cannot be classified under one of the themes. Instead I used the following order: safety standards, funding, requirements of the Floods Directive, plans, other instruments and codified responsibilities of private parties.

4.1 The Netherlands

The Netherlands is the only studied country which has codified standards for all flood defence structures protecting the whole country (s. 2.2 and Annex II Water Act).

The regional water authorities can levy taxes (title IV of the Water Authorities Act) which can amount to approximately 95 per cent of their expenditure.³⁸

For the strengthening of primary flood defences which do not meet the safety standards, the Flood Protection Programme (FPP, *Hoogwaterbeschermingsprogramma*) is relevant; this programme is a fund. In the FPP, water managers work together. It is stated that this is an alliance.

The Delta Commissioner has the Delta Fund at his disposal. The fund is financed by the contributions made by the regional water authorities to the FPP and by an allocation from the State. The projects of the FPP are financed by the Delta Fund. Also other water safety projects are financed by the Delta Fund.

No preliminary flood risk assessment has been

cont.

La Qualité de Propriétaire D'un Digue Pour Déterminer Les Obligations D'entretien" [2013] La semaine juridique - Administration et Collectivités territoriales 19.

³⁷ These actors actively participate in the policy-making of central FRM, but the Minister is responsible (the Minister of Infrastructure and the Environment (the Netherlands), the Minister of Mobility and Public Works (Flanders), the Minister of the Environment (France)).

³⁸ Rijswick and Havekes (n. 7) 189.

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conducted. Instead flood risk maps, flood hazard maps and flood risk management plans have been drawn up for the entire country. These flood risk management plans for the Meuse, Rhine, Scheldt and Ems river basins are a new addition to the existing plans.

Regional water authorities as well as the central government have to establish water management plans. Among other things, they contain the measures which are necessary to fulfil the obligations of the Water Framework Directive (WFD) and the FD. The plans describe how the water authorities intend to carry out their responsibilities.³⁹

A spatial zoning plan (*bestemmingsplan*) is a legally binding instrument included in the Spatial Planning Act (Chapter 3). A spatial zoning plan contains the goals and aims of the municipality, maps, and a description of the permitted use of buildings and building construction.

In order to enlarge the storage capacity of a regional water system, the water authority can create storage areas for temporary water storage.⁴⁰ Once the area is legally created, the competent authority can impose an obligation to tolerate water nuisance and flooding on the premises.⁴¹ It provides for the possibility to be awarded compensation for any loss caused by such a obligation to consent.

The Water Assessment is only compulsory in relation to zoning plans (*bestemmingsplannen*) and project decisions (*projectbesluiten*).⁴² A Water Assessment could, however, also – but optionally – be carried out in relation to other spatial plans and decisions.⁴³

Dutch FRM is highly institutionalized and most tasks are laid down by state organs. Flood management in unembanked areas and in case of excessive rainfall-induced urban flooding are the only tasks that formally belong to citizens.⁴⁴

Concluding remarks

The division between central and decentralised tasks is also apparent in the legal instruments. At the central level, general flood risk management strategies are established and laid out, but a concrete elaboration of the strategies takes place at decentralised levels. The strict distinction between spatial planning and water management is also visible in the instruments by having different competent authorities with their own plans. Therefore the Water Assessment is necessary as a bridging mechanism.⁴⁵ The relatively new “multi-layered safety approach” introduced in the Delta Programme tries to connect proactive spatial planning with flood risk management in order to prevent and reduce (the consequences of) floods. The lack of responsibilities for private parties is apparent in the fact that there are no instruments that address their responsibilities. Moreover, by having a codified safety standard for the whole country and every inhabitant, the government assumes responsibility for the safety of private parties according to normal safety norms.

Beyond these standards private parties have their own responsibility.

4.2 Flanders

Flanders has no safety standards which are codified by law, in contrast to the Netherlands. However, the Sigma Plan (see below) did introduce safety standards. By realising the Sigma Plan projects these standards should be met.

In 2003 the so-called Rubicon Fund was established to cover the recovery costs and to fund flood defence works⁴⁶ and provide for the possibility for municipalities to receive financial resources for the compensation of planning blight caused by the designation of signal areas (see below).⁴⁷ The fund itself is financed from different sources. A part of the so-called plan profit levies (*planbaten*)⁴⁸ – income from activities which are part of the Rubicon Fund and the allocation of general means – are its recourses.

The whole FD is implemented through the Decree on Integrated Water Policy (DIWP).⁴⁹ No preliminary flood risk assessment has been conducted. Instead,

³⁹ Rijswijk and Havekes (n. 7) 219.

⁴⁰ WJ van Doorn-Hoekveld and FAG Groothuijse, “Schadevergoeding Ten Gevolge van Bergingsgebieden: Een Juridisch Labyrint” (2015) 75 *Tijdschrift voor Agrarisch Recht* 358.

⁴¹ Willemijn van Doorn-Hoekveld *et al.*, “Distributional Effects of Flood Risk Management – a Cross-Country Comparison of Preflood Compensation” (2016) 21 *Ecology and Society* 26.

⁴² Articles 3.1.1 (1) and 3.1.6(1b) Spatial Planning Decree 2008.

⁴³ In Article 5.22 Decree on the Quality of the living environment (a decree which falls under the Environmental Planning Act) the water assessment has been given a more concrete formal status, according to the Explanatory Memorandum, p. 122.

⁴⁴ Mark Wiering *et al.*, “The Rationales of Resilience in English and Dutch Flood Risk Policies” (2015) 6 *Journal of Water and Climate Change* 38, 42.

⁴⁵ Bridging mechanisms are defined as “Instruments that remedy fragmentation by enhancing interconnectedness between relevant actors through information transfer, coordination and cooperation.” Herman Kasper Gilissen *et al.*, “Bridges over Troubled Waters - An Interdisciplinary Framework for Evaluating the Interconnectedness Withing Fragmented Flood Risk Management Systems” (2016) 25 *Journal of Water Law* 12.

⁴⁶ *Belgian Official Journal* 12 September 2003, p. 45704 and Flemish Parliament 202-2003, 1670, Explanatory Memorandum, p. 20.

⁴⁷ Order of the Flemish Government of 20 June 2014 specifying the rules related to the allocation of subsidies in the context of the Rubiconfund, *Belgian Official Journal* 25 September 2014, p. 76846.

⁴⁸ In Flanders, the initiators of spatial plans have to pay a so-called plan benefit levy.

⁴⁹ Of 18 July 2003, which was substantially amended in July 2013.

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flood risk management plans have been drawn up for the whole of Flanders, which are part of the river basin management plans for the Scheldt and Meuse.⁵⁰ In these plan different preventive measures are included which are part of spatial planning. They focus on the prevention of building in flood-prone areas and the removal of obstructions in those areas, which can be done by – compulsory – purchase or expropriation.⁵¹

After a severe flood in 1976 the government decided to realise the Sigma Plan. In the plan so-called flood control areas (FCA) were introduced. These are low-lying polders, next to estuaries, which are surrounded by dikes. Dikes were lowered so that water can overflow the dike during a storm tide.⁵²

A fairly new instrument in the Flemish FRM are signal areas (*signaalgebieden*), which are undeveloped areas with a “hard” (residential or industrial) destination in flood-prone areas. They are described as areas which are important to the water system and which conflict with the hard spatial destination of the area.⁵³

The original aim of the Flemish water test (*watertoets*)⁵⁴ was to enhance coordination between water management and spatial planning.⁵⁵ The Water Test assesses the impact of a plan or a project on the water system. An important notion is that the Water Test can only be used to prevent new harmful effects, not to remedy existing ones.⁵⁶ The Water Test will lead to a “water paragraph” in all spatial plans. When the Water Test shows that a negative impact on the water system might occur, it describes the measures that need to be taken to prevent or limit these negative effects or the ways in which the harmful effects can be restored or compensated.

The reform of the DIWP introduced another new instrument, the so-called “duty to inform”.⁵⁷ It prescribes that persons who sell immovable property or rent it out for a period exceeding nine years, or who bring immovable property into a company or transfer usufructs, leasehold or superficies, have to provide information concerning the fact that the immovable property is located in a flood-prone area. This information should be included in all publicity regarding the immovable property and also in all necessary authentic and private contracts.⁵⁸

Concluding remarks

In the instruments a central influence can be seen with the designation of signal areas and the fact that projects of the Sigma Plan need to be approved by the central government. However, most of these instruments are at the local level. Signal areas are an instrument that connects the domains of spatial planning and flood risk management. Flood risks form the basis for spatial strategies in these areas. Another important instrument in this regard is the Water Test, which has a very broad scope. It is interesting that the authority which is competent to issue a permit or to draft a plan should carry out the Water Test, even though it does not possess any

expertise regarding water management. The water manager may give advice, but has to be requested to do so. Private parties are more involved in the instruments, although they may not be aware of that fact. Firstly, by paying the plan benefit levy, they feed the Rubicon Fund and therefore pay for specific flood risk management measures. Secondly, the duty to inform does not involve public authorities, but private parties.

4.3 France

French law does not set safety standards for the whole country, but the Environmental Code does include a kind of standard. For the creation of flood defences a permit is necessary. In order to receive the permit, a risk assessment has to be carried out (Arts. L211-3 and R214-116 Environmental Code). When a request for an authorization to construct diking in a specific area is filed after 1 January 2020 and that area has not previously been protected against flooding, then a safety level ranging from 1/200 for Class A, 1/100 for class B, or 1/50 for class C is mandatory (Article R214-119-3 Environmental Code).⁵⁹

In 1982 the CAT-NAT regime, a public-private partnership between insurers and the State, was created. Buildings and movable property are covered by insurance against flood risks. Some 12 per cent of the insurance premiums for damage or loss of property are redistributed between insurers and the Central Reinsurance Company (CRC), which is owned by the state.⁶⁰ The CRC has unlimited coverage, because of the guarantee by the state.⁶¹

⁵⁰ Article 34 DIWP.

⁵¹ Meuse FRMP, 2016, 225, Scheldt FRMP 2016, 272.

⁵² Patrick Meire *et al.*, “Sigma Plan Proves Efficiency” (2014) 62 ECSA Bulletin 19, 20.

⁵³ Peter De Smedt, “Towards a New Policy for Climate Adaptive Water Management in Flanders: The Concept of Signal Areas” (2014) 10 *Utrecht Law Review* 107, 108; Hannelore Mees *et al.*, “Analysing and Evaluating Flood Risk Governance in Belgium. Dealing with Flood Risks in an Urbanised and Institutionally Complex Country” (2016) 41.

⁵⁴ The term “Water Test” is used in order to make a clear distinction between the Dutch instrument (Water Assessment) and the Flemish instrument (Water Test).

⁵⁵ Explanatory Memorandum of the Decree on Integrated Water Policy, *Parl. St.* VI. Parl. 2002-2003 no. 1730/4, p. 5.

⁵⁶ Council of State 12 July 2007, no. 173.482; 9 January 2007, no. 166.439; 29 October 2009 no. 197.469; 1 October 2010, no. 207.830; 22 June 2011, no. 214.033; 24 October 2011, no. 215.969.

⁵⁷ Article 17bis DIWP.

⁵⁸ Mees *et al.* (n. 62) 75.

⁵⁹ Goytia *et al.* (n. 32).

⁶⁰ OECD (n. 20) 143.

⁶¹ Cathy Suykens *et al.*, “Dealing with Flood Damages: Will Prevention, Mitigation, and Ex Post Compensation Provide for a Resilient Triangle?” (2016) 21 *Ecology and Society* 1;

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The Fund for the Prevention of Major Natural Hazards (*Fonds de Prévention des Risques Naturels Majeurs*, FPRNM, also referred to as the Barnier Fund) is financed by a levy on the CAT-NAT insurance premium to finance asset-acquisition measures, the costs of drawing up PPRs, the expenditure on information on prevention and measures to reduce vulnerability risk.⁶² Some of the measures financed by this fund are the expropriation or amicable acquisition of property located in areas with a high (natural) risk. Currently also the costs for establishing PPRs are included, as well as the funding of PAPIs (see below).⁶³

The National Fund for the management of agricultural risks (*Fonds National de Gestion des Risques Agriculture*) is a so-called “multi-risk climatic insurance” scheme, which is also financed by a public-private fund by private insurance companies and the state. This insurance is only applicable to agricultural losses caused by a natural disaster.⁶⁴

In France, the FD has been transposed into domestic law in the Grenelle II Law.⁶⁵ France has decided to draft a National Flood Risk Management Strategy. This strategy has been made by the Ministry of Environment with the active participation of the Joint Flood Commission, so the interests of stakeholders have been considered. The strategy is a framework for the flood risk management plans; it identifies national objectives and sets priorities in flood risk management.⁶⁶

France has established 13 flood risk management plans.⁶⁷ Other plans, e.g. territorial coherence schemes (SCOT), local zoning plans (PLU) and flood risk plans concerning flood risks (PPRI), have to be compatible with flood risk management plans.

Flood prevention action programmes (*programmes d'action et de prévention des inondations*, PAPI) were introduced in 2002. When a project is given the label “PAPI”, the project will receive funding from the National Fund for Major Natural Risk Prevention. Apart from that, the Ministry of the Environment can provide additional funding to projects. PAPIs are considered to be a partnership between the state and local authorities. Local authorities are the initiators of the projects, which are implemented by a range of public and private parties.⁶⁸

The PSR is a contractual plan with a focus on flash floods as a result of dike failure (since 2011). It is a national plan whose relevance is mainly the funding mechanism which it includes. The Joint Flooding Committee accredits all project proposals based on a PSR.

The SDAGE, the legally binding water management master plan,⁶⁹ developed and adopted by the basin committee and approved by the Basin Coordinator Prefect, expresses and describes the fundamental guidelines encouraging a balanced and efficient management of water resources, drinking water supplies, flood control and the sustainable development of economic activities. Decisions regarding water

management and (urban planning) decisions of territorial authorities must be compatible with the SDAGE,⁷⁰ and the SAGE, which is a local water management plan,⁷¹ that includes the same guidelines on the level of a watershed.

Plans for the prevention of foreseeable natural risks (*Plan de prévention des risques naturels prévisibles*, PPR) are developed by the State by a decision of a prefect. A PPR contains graphic documents establishing zoning in which different degrees of flood risks are defined.

The municipality is the most important authority for urban development. Local zoning plans (*Plans Local d'Urbanisme*, PLU) are the local urban plans (*plans local d'urbanisme*). They set out an overall urban development and planning outline and lay down land-use rules as the central urban planning document. Flood prevention must be included in the PLU.⁷²

The Territorial coherence schemes (*Schémas de Coherence Territoriale*, SCoT) entail a strategic planning tool for medium and long-term planning, including territorial projects for (groups of) municipalities in order to create consistency in different policy fields (urban development, housing, travel and

cont.

Roland Nussbaum, “Involving Public Private Partnerships as Building Blocks for Integrated Natural Catastrophes Country Risk Management – Sharing on the French National Experiences of Economic Instruments Integrated with Information and Knowledge Management Tools” (2015) 5 *Journal of Integrated Disaster Risk Management* 70, 87; Barraqué (n. 27) 7.

⁶² OECD (n. 20) 71.

⁶³ Barraqué (n. 27) 10; Nussbaum (n. 80).

⁶⁴ Katrin Erdlenbruch *et al.*, “Risk-Sharing Policies in the Context of the French Flood Prevention Action Programmes.” (2009) 91 *Journal of Environmental Management* 363, 365

⁶⁵ Law no. 2010-788 du 12 juillet 2010. This law modifies the Environmental Code (chapter III, section 4 and chapter VI). The obligations are specified in Décret no. 2011-227 of March 2011.

⁶⁶ France has decided to draft this strategy in the process of the implementation of the FD, although it is not an obligation under the FD.

⁶⁷ Official Gazette 22 December 2015, No. 0296.

⁶⁸ Tom Raadgever *et al.*, *Practitioner's Guidebook* (STAR-FLOOD Consortium 2016) 41.

⁶⁹ Water Development and Management Master Plan (Schéma Directeur d'Aménagement et de Gestion des Eaux, SDAGE).

⁷⁰ Conseil d'État, “L'eau et Son Droit” in Oliver Schrameck and Corinne Mathey (eds), *Études et documents du Conseil d'État* (2010) 86.

⁷¹ Water Management Plan (Schéma d'Aménagement de Gestion des eaux, SAGE).

⁷² *Préfet des Alpes-Maritimes* [28 September 1992] Tribunal Administratif Nice, req. No. 93-1986; *Sté Valente et la Selva* [5 May 1994] Tribunal Administratif Nice, req. No. 90-85 and 90-772.

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commercial facilities). The integration of flood prevention in the SCoT is mandatory.

Buyers and tenants have to beware of the existence of natural risks if the property is located in a zone contained in the major natural risk prevention plan.⁷³ The seller or lessor should also inform the buyer or tenant of any former (officially declared) natural disasters that occurred “on” the property.

Concluding remarks

The influence of the central state is visible in the National Flood Risk Management Strategy that should give decentralised authorities guidance for establishing their plans. The prefect should take care that the decentralised authorities do take this central strategy into account in their policy-making. France does have a strong connection between spatial planning and flood risk management. Not only because issues addressed in the water plans SDAGE and SAGE must be taken into account in the spatial plans PLU and the SCOT, but they are annexed to these plans in order to prevent discrepancy. Citizens pay for preventive measures, because a part of the insurance premiums of CAT-NAT are used for the Fund for the Prevention of Major Natural Hazards. Also the duty to inform exists in France. Safety standards are introduced for new projects. These are not applied in the current situation. It is interesting to see that even though there are no hard obligations to prevent flooding (e.g. by codifying safety standards for the whole country or flood-prone areas), the mayor and prefect can nevertheless be held liable for losses that are caused by flooding. This might be explained by the fact that the *ex post* system in France is much more elaborate than the prevention of floods.⁷⁴

4.4 Preliminary Comparison of the Instruments

The countries have in common that, at the national level, general flood risk management strategies are established, but their elaboration needs to take place at the local level. These local plans contain binding elements. In the case of the projects of the Flemish Sigma Plan and the French water management plans the central state does have an influence because of the necessary approval of the Flemish government and the prefect before they can come into effect.

In all of the studied countries, preventive flood risk management finds a place in general spatial planning documents. There is tension between the interest of FRM and all other aspects that are weighed in the planning process and end up in the spatial plans. The Dutch and the Flemish have a specific instrument which should secure water interests (Water Test and Water Assessment), while the French have the legal obligation to include flood prevention in their spatial plans (SCoTs and PLUs) or to annex relevant parts of the (flood) risk plans.

The Dutch Water Assessment and Flemish Water Test differ on some important aspects: the Dutch

Assessment is carried out by way of an advice by the water manager who has expertise in relevant water issues; in Flanders, the competent authority – in most cases a municipality – has to carry out the study. The scope of the Flemish Water Test is much broader than the one in the Netherlands. The latter is only applicable to plans, in Flanders also different permits fall under the scope of the Water Test.

The instruments show that Dutch private parties have no responsibilities in this respect, which is a significant difference with Flanders and France. In France, citizens have the right to protect themselves and pay for preventive flood risk management by means of their insurance premiums and in Flanders they also pay for flood risk prevention by the plan benefit levy. In both France and Flanders there is a duty to inform future tenants or buyers about flood risks on the premises in which they are interested.

V. General Comparison

A comparison needs to start with the remark that one must bear in mind that the geographical scale of the studied countries differs greatly.⁷⁵ This has an influence on the differences between the various competences and instruments. However, a geographical explanation does not form part of the research.

The mandatory instruments of the FD (Flood Risk Management Plans and the flood risk and hazard maps) have been implemented in all three countries and do not greatly differ.

Another similarity between the countries is the fact that – at least in theory – flood risk management takes place at a decentralised level. At the central level, the general policy is set by the competent Ministry and is supported by a specialised committee (the Dutch Delta Commissioner, the Flemish Committee for Integrated Water Management and the French Joint Flooding Committee). The Dutch Delta Commissioner has a special role, because he has the so-called Delta Fund (S. 7.4a Water Act) at his disposal in order to take measures to prevent flooding. The Joint Flooding Committee also plays a role in funding, but it differs from the Dutch situation because that Committee only approves project proposals submitted as PAPIs or as PSR. The French situation is also notable because the central state is present in all decentralised layers, in the person of the prefect. The prefect should ensure that central policy is implemented correctly in all the decentralised layers.

Even though umbrella plans or programmes are present in all of these countries (the Dutch Delta

⁷³ Larrue *et al.* (n. 30) 97.

⁷⁴ Cathy Suykens *et al.* (n. 80); Larrue *et al.* (n. 30).

⁷⁵ Kaufmann *et al.* (n. 7); Mees *et al.* (n. 62); Larrue *et al.* (n. 30).

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Programme, the Flemish Sigma Plan and the French national flood risk management strategy), the Dutch Programme is the most concrete of the three. Although the Sigma Plan also consists of different projects, the plan itself lacks an overarching document in which the projects are connected. The French Strategy forms the input for the FRMPs, but does not include concrete measures that need to be realised.

The Dutch Flood Protection Programme can be compared to the system of the French PAPIs. In both cases, regional or local authorities may ask for funding for a specific project for flood protection. The difference lies in the fact that in the Netherlands the necessity of the projects follows the fact that specific flood defences do not meet the standards set by the Water Act. In France, it is up to the local authority to assess whether the project is necessary or not. Both instruments can be considered as a form of cooperation between different administrative levels.

With the current national strategy, the legal instruments and the MAPAM law, one could conclude – at least in theory – that the focus in French flood risk management has shifted from protection towards prevention. Synergy between different policies is very important and the choice to assign municipalities and EPCIs with flood risk management tasks will (hopefully) lead to a link between spatial development and flood risk management. In France flood risk management which is laid down in a water management plan (SDAGE, or SAGE) or risk prevention plan (PPRi) should be included in spatial plans (SCoT and PLU).⁷⁶ The Netherlands and Flanders need a specific bridging mechanism (Water Assessment and Water Test) in order to connect flood risk management to spatial planning.

The Water Assessment and the Water Test also differ slightly. One difference is the fact that in Flanders the initiator of the spatial development – the authority which issues the permit or decides on the plan or programme – conducts the Water Test. It can ask the water manager for advice, but only when the development is located in a flood-prone area is this advice mandatory. In the Netherlands, the water manager carries out the research and is seen as an “interested party” and also possesses the normal rights which interested parties have. The other difference with the Netherlands is that the Flemish test is not restricted to plans, but also extends to permits in more policy fields.

The responsibility of citizens and the ownership of flood defence structures also differs in the three countries in question. In the Netherlands, a dike can be privately owned, but the water manager is always responsible for the maintenance thereof. In France, the dike can also be privately owned, but here we find a major difference: the owner (regardless of whether it is a private party or the state) must maintain the dike.⁷⁷ This can be explained by the fact that in France in the past citizens were seen as being responsible for

their own safety. Conversely, in the Netherlands, flood risk management has been a task for water authorities since the Middle Ages. However, in France during the last few decades, flood protection has increasingly become a governmental task. Even though with the PSR and PAPIs protection projects are often public-private partnerships.

All countries have a fund which specifically addresses flood risk management (the Dutch Delta Fund, the Flemish Rubicon Fund and the French Fund for the Prevention of Major Natural Hazards). A significant difference is the way in which these funds obtain their financial means. In Flanders and France private parties partly pay for these funds. Flemish initiators which have requested a change to the spatial plans and, as a consequence, have to pay a so-called “plan benefit levy” (*planbatenheffing*) and French insurance premiums are partly used for this purpose. On the contrary, in the Netherlands the Delta Fund obtains its financial means entirely by governmental contributions of the State as well as the regional water authorities although both are based on taxes.⁷⁸

The duty to inform exists in France as well as in Flanders. In Flanders this duty is the most active: the seller or lessor should actively inform potential buyers or tenants about flood risks. In France, there is an active duty to provide information on past – officially declared – natural disasters, so it is broader than flood risks. In France, it is also somewhat similar to the Netherlands in the sense that buyers or tenants should be aware of any natural disasters, but it is not defined *how* they should be informed. One could assume that – in the Netherlands this is a fact – people bear their own responsibility to be informed about any risks concerning their potential property.

VI. Analysis

The title of the article suggests that the regimes are compatible. The term “compatible” needs a definition. One definition is that “ideas or systems that are compatible can exist together”, another is “likely to have a good relationship because of being similar”.⁷⁹ The first definition has my preference, because although systems can differ greatly, they can perfectly exist together. However, the differences may not be too large and the relevant actors must bear in mind these differences in order to prevent them from becoming a hindrance for cooperation.

The fact that the FD has to be implemented in the domestic administrative structure of these countries

⁷⁶ E.g. this is stressed in the NSFRM, p. 9 and LOI no. 2014-58 (27 January 2014).

⁷⁷ Larrue *et al.* (n. 30) 130.

⁷⁸ The latter may raise taxes and therefore private parties do contribute indirectly.

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leads to many different competent authorities and instruments that are used to create flood risk management. Not only do the physical circumstances differ greatly: we are here concerned with small countries which are densely populated with high flood risks (the Netherlands and Flanders) and a large country with differentiated flood risks (France), but the administrative and legal contexts differ significantly. The Netherlands and Flanders are very decentralised, while in France, the central government still has a great deal of influence.

Some generalities can be identified arranged by the three themes posed in the introduction.

The central-decentral divide

Regarding the first theme, in all three countries the central state has created a body that should integrate flood risk management (or water management in general in Flanders): the Delta Commissioner in the Netherlands, the CIW in Flanders and the Joint Flood Commission in France. These organs have more (the Netherlands) or less (France) policy-making authority.

Looking at the competent authorities, the Netherlands stands out with a conveniently arranged functionally decentralised structure of one national water authority and geographically divided regional water authorities. The transparency of the Dutch system and the corresponding legal certainty that belongs to clear codified competences and responsibilities can be considered a best practice. In Flanders more authorities have tasks concerning water management. Hence, the possibility to delegate tasks to other organs makes the organisation less transparent. In France, however, the structure is the most complex because water issues can be dealt with on different administrative levels and the municipalities can delegate powers to different cooperation bodies, such as an EPCI or an EPTB. Also the water syndicates are more or less voluntary cooperation organisations. These differences must be borne in mind when different states wish to cooperate.

Flood risk management and spatial planning

This theme is relevant for the implementation of the Floods Directives, as the Directive obliges Member States to include prevention through spatial planning in their flood risk management plans.⁸⁰ The division between spatial planning and flood risk management is eminent in all three countries. The solutions to connect these two policy fields are diverse. In the Netherlands and Flanders the bridging instrument of the Water Assessment and Water Test are used to secure water interests. One of Flanders' best practices are the signal areas in which water management and spatial planning come together.

In France there is a legal obligation that the spatial planning documents SCoT and the PLU must be compatible with the water plans SDAGE and SAGE. One could argue that France in theory has the best

instruments to create flood prevention through proactive spatial planning because a) the tasks of flood risk management and spatial planning are both in the hands of the municipality, and b) there is a legal obligation to incorporate the water plans in spatial plans. However, in practice, this aspect can still be more effective.⁸¹ The best practice of the first theme – transparency of the system – has also a drawback. In the Netherlands, one of the reasons that the prevention strategy does not develop quickly, is the fact that the division between water management and spatial planning is large. Different authorities have their own legally embedded tasks and responsibilities. They are afraid to face liability claims when they fulfil the task that legally belongs to another authority.⁸² Therefore, they prefer to wait for the legislator to come up with a solution and re-divide the tasks. In Flanders and France best practices are found. The Flemish signal area is a classic example of the connection between water management and spatial planning. The French obligation to include flood risk plans in spatial plans are also enhancing the integration of both policy fields.

The public-private divide

The third theme regarding the responsibility of private parties concerns different aspects. A first sign of delegating responsibilities to private parties or not is the presence of codified safety standards. The Netherlands is the only country with safety standards covering the whole country codified by law. In Flanders, the existing standards are on an ad hoc basis as part of the Sigma Plan and in France these standards are only applicable for new projects and do not cover a specific area. One could argue that by having codified safety standards, with legal responsibility for public authorities to fulfil these standards, in combination with a constitutional duty to keep the country habitable, the Dutch state is giving a message that it will ensure the safety of citizens. It can be debated whether this is a best practice or not. The balance of the public-private divide is in disequilibrium. However, the division is transparent and clear. One could also argue that the importance of good and secure flood risk management is that great that another balance is not possible. This is in contrast to

⁷⁹ McMillan Dictionary.

⁸⁰ Rec 14 Preamble FD, Art. 7 (3) FD, principle 1 (d) Annex of COM(2004)472.

⁸¹ Larrue *et al.* (n. 30).

⁸² Willemijn van Doorn-Hoekveld, "Compensation in Flood Risk Management with a Focus on Shifts in Compensation Regimes Regarding Prevention, Mitigation and Disaster Management" [2014] *Utrecht Law Review* 216; H.K. Gilissen, *Adaptatie Aan Klimaatverandering in Het Nederlandse Waterbeheer. Verantwoordelijkheden En Aansprakelijkheid* (Kluwer 2013).

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France, which gives its citizens a codified right to protect themselves against flooding. This can be explained by the fact that Dutch flood risk management has rested with public authorities since the Middle Ages and in France, on the contrary, it has only recently been considered to be a public task.⁸³

Best practices can be found in the Flemish and French duty to inform. By giving citizens the information that is necessary to make a conscious decision and can be held responsible for the consequences of this decision.

Also funding touches upon this theme. The countries have in common that they have funds for financing flood risk management measures: the Dutch Delta Fund, the Flemish Rubicon Fund and the French Fund for the Prevention of Major Natural Hazards. The origin of the finances differs however. In the Netherlands the financial means emanate from public authorities, in Flanders they are paid partly by private parties through the plan benefit levy and in France a part of the insurance premiums is diverted to the fund.

This theme shows the importance of how flood risk management is shaped. In the Netherlands the responsibility of citizens has been taken over by the state. In Flanders, but even more so in France I found that private parties have major responsibilities. In the latter, flood risk management has only recently been seen as a public task in comparison with the very old system in the Netherlands. By laying down the responsibility of public authorities, it seems more logical that flood protection is better developed, because water authorities can manage flood defence structures and retention areas better than that they can try to develop spatial planning measures. In France one can again find more responsibility being delegated to private parties, firstly because the owner of a flood defence is responsible for the maintenance of it and secondly, because risk areas are highlighted in different plans and private parties must ensure that they are informed about these risks.

The differences can also be explained by the

different view concerning public and private responsibilities regarding flood risk management, which, for its part, can be explained by the geographical differences and flood risks and the historical development of flood risk management.

VII. Conclusion

For transboundary issues concerning flood risk management, it is important that transboundary cooperation is furthered. This article shows that the differences at the administrative and legal level make it difficult for countries to know which authority is competent for a specific aspect of flood risk management. The themes used in the analysis – central-decentral divide, friction between different fields of law and the public-private divide – can also be used in other legal comparisons of environmental law, because they are a recurring phenomenon.

This article made a start in describing the competences and instruments of the Netherlands, Flanders and France and found similarities and differences between these states. It shows that large differences exist between the three states that a party must bear in mind when trying to cooperate with other states. It also shows that implementing the Floods Directive in the national legal order is necessary, because of these aforementioned differences in competences and the legal instruments available. A “one solution fits all” approach is not possible in this regard. However, the differences do not hinder the compatibility of the studied regimes. The three can exist together and the found differences do not necessary form an obstruction for cooperation, when they are born in mind. Indeed, the legal regimes admit the possibility to implement best practices from the other regimes and thus develop a regime that fulfils the requirements and aims of the Floods Directive even more.

⁸³ Larrue *et al.*.