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Compensation in Flood Risk Management with a Focus on Shifts in Compensation Regimes Regarding Prevention, Mitigation and Disaster Management

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Introduction

In the Netherlands, the history of water management and water safety especially, goes back centuries. Compensation of damage caused by lawful acts of an administrative body (no-fault liability) is developed mostly in the field of water management and has quite a long history as well. The compensation of no-fault liability in the Netherlands since its introduction has been part of public law and not of civil law. This does not mean that the administration cannot be held liable for wrongful actions, in which case private law is applied. There is a strict distinction between wrongful and lawful acts of the administration: both can cause damage, but the way they are compensated differs: for lawful acts, public law is applied and for wrongful acts civil law (tort law) is applied. This article only considers public law, because it is the most important branch of law for the compensation of damage caused in the field of water safety. The field of water safety and flood risk management has seen many new developments, of which integration is the latest one. However, the course of flood risk management tends towards more segmentation of responsibilities. No-fault liability and other questions of compensation are also areas that are developing towards more integration. Assessment of no-fault liability in the field of water safety management cannot be made without taking into consideration the historical development of the responsibility of the state for water management tasks in general. In this contribution, the author addresses the historical development of responsibilities of the state for water management tasks, recent developments in this area and the system of no-fault liability regarding measures to prevent flooding.

1. The Dutch context

'God created the world, and the Dutch created the Netherlands.' This Dutch saying illustrates how the Dutch think about their country. Most of the Netherlands is reclaimed land. This is discernible in the large number of polders the Netherlands has. The largest one is Flevoland, an entire province. Flood disasters in the past led to great flood defence structures. Not only has one sea (the Zuiderzee) been closed off, but also the estuary of the Easter Scheldt, which made the Dutch famous for their water management all over the world. Apart from experiencing water as a threat, the Dutch economy benefits

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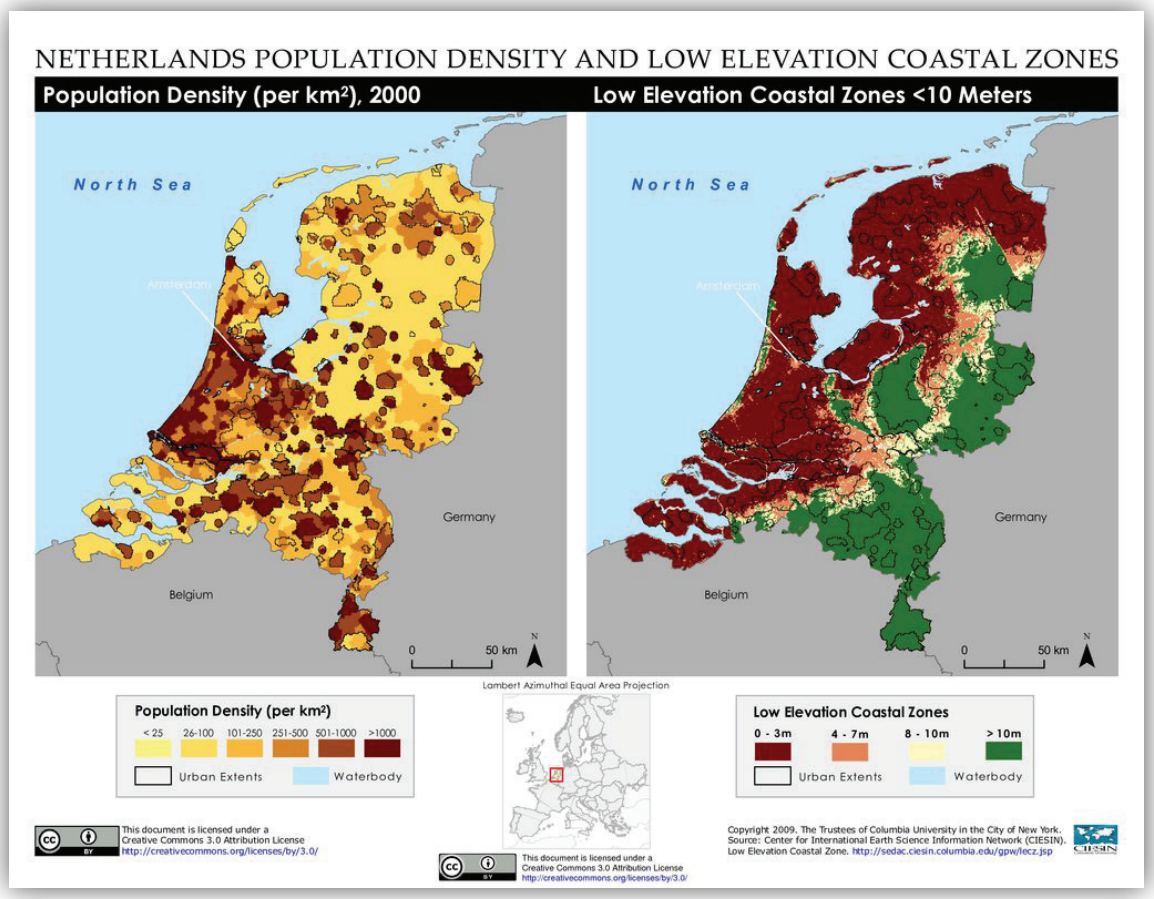
from water. Until a couple of years ago, the Harbour of Rotterdam was the world's largest harbour and it still is Europe's most important harbour network. In this section I will give an overview of the related physical context and pose the question that I will address in this article.

1.1. Physical circumstances of the Netherlands

In order to understand the Dutch case, it is necessary to know the physical context. In October 2013 the Netherlands had 16.8 million inhabitants living on approximately 41,500 km^2, meaning that it is a highly densely populated country with an average of nearly 500 people/km^2 (2009).[1] The Randstad region, located in the western part of the country, is the economic heart of the Netherlands. It includes the four largest cities: Amsterdam, Rotterdam, The Hague and Utrecht. Due to its location in the delta of the Rhine the Randstad is located in an low-lying area susceptible to flooding. 26% of the country is situated below sea level. Over 60% of the country would be regularly flooded if it were not be for the protection of dikes. Approximately 9 million people live in this flood-prone area in which 70% of GNP is produced.[2] This is illustrated in Figure 1. Being a low-lying delta of four European rivers (Rhine, Meuse, Scheldt and Ems) flood protection has been a way of life since the early Middle Ages.

Figure 1 The population density of the Netherlands and the elevation of coastal zones[3]



1 Centraal Bureau voor de Statistiek (English: Statistics Netherlands), *Population; Key figures*, 5 April 2013.
2 Letter from the State Secretary for Infrastructure and the Environment, *Kamerstukken II*, 2011/12, 31710, no. 26.
3 Source: <http://sedac.ciesin.columbia.edu/data/set/lecz-low-elevation-coastal-zone/maps>.

1.2. Research question

As mentioned above, the Dutch have a special relationship with the waters surrounding them. The topographical and demographical circumstances of the Netherlands were leading in measures that were taken in the past. Being highly densely populated, keeping people away from the water was no option. For this reason flood protection consisted of measures to keep the water away from the people through flood defence measures. Another aspect of being highly densely populated is that most of the property of the Netherlands is owned by private parties. Hence, defensive measures influence private property to a large extent. This in turn led to the development of compensation regimes. Therefore, compensation and flood risk management in the Netherlands are closely connected and developed. The existence of compensation regimes led to the legitimacy of measures taken to protect the country against flooding with the result that these measures could be carried out easily. However, adaptations to one may lead to necessary adaptations in the other, thus slowing down the decision-making process. At the moment, various developments in both flood risk management and compensation regimes are taking place.

In the Netherlands the general trend is to integrate and merge legal provisions and legislation.[4] This affects flood risk management legislation and compensation regimes as well. However, the current trend in flood risk management is towards a focus on the segmentation of responsibilities among different public and private actors. In view of these incompatible trends the question is: Do the current developments in flood risk management – shifting from prevention towards mitigation and disaster management, therefore from integration to segmentation – suit the harmonized compensation regimes? In order to answer this question I will describe the developments of both flood risk management and compensation regimes regarding no-fault liability with a focus on responsibilities and connections between these two areas.

2. Water safety as a public task

2.1. Concise history of water management from a legal point of view.

The Netherlands has a rich history with regard to the fight against water. In the 11th century land was reclaimed and inhabitants started to build dikes to protect themselves and their new land against flooding. Landowners who had an interest in the protection of their property started co-operations to secure their water management interests, the so-called water boards. With the increasing number of dikes, dike breaches also became more frequent.[5] Because of the size and lack of integration of the water boards, no co-operation was established between them. In the 15th century great floods occasionally forced the central Government to intervene in order to coordinate some kind of water management. In the 17th and 18th centuries not only dikes protected the land but also the so-called overflows or outlets. These are intentionally low dikes to divert water downstream. It was prohibited to build obstructions or buildings in the diversion channels. However, these overflows were considered a waste of useful (agricultural) land. Hence, most of them have been removed in the course of time.

In 1798 a national water management agency (*Rijkswaterstaat*) was founded. The new agency was described as having three main tasks: river management, coastal defence management and interior water management. The Constitution of 1798 proclaimed water management to be one of the responsibilities of the central Government. In 1806 a River Act came into force. This Act gave the national water management agency the final responsibility regarding the status of rivers and enabled the agency to enforce all necessary measures to guarantee the drainage of water. With this Act the legal rights of water boards were diminished by the new competences of the national water management agency.[6] In 1813, the regional water authorities revived their old power and jurisdiction, but according to the Constitution of 1814 they were supervised by the provinces and the state. In the Constitution of 1848

4 In the Netherlands, an Act is the highest form of regulation by the administration. Parliament (consisting of the Lower and Upper Chamber) needs to approve an Act. A Decree is a decision of the Government (King and Ministers), without the cooperation of Parliament. A Decree is the elaboration of an Act. A regulation is the elaboration of a Decree and the procedure is very short. Decentralised by-laws are produced by decentralised authorities.

5 J.M. Praamsma, 'Van gevaarlijk water tot vaarwater', 1988 *De Nieuwe Geografenkrant*, no. 3, p. 20.

6 A.A.S. van Heezik, S*trijd om de rivieren. 200 jaar rivierenbeleid of de opkomst en ondergang van het streven naar een normale rivier*, 2008, p. 58.

the term 'water boards' (*waterschappen*) was first mentioned. This Constitution was the starting point of the Municipalities Act in 1851 and led to a definitive division of general administration (task of the municipalities) and the water management agency.[7]

In 1851 the Netherlands concluded a Treaty with Germany to start river improvements. In 1868 free Rhine shipping for the German fleet was concluded in the Mannheim Treaty.[8] These treaties led to the stimulation and regularization of river improvements and water management. Starting in 1850 a number of projects were carried out to expand and improve waterways. In the same period the provinces started to reorganize and harmonize the water boards in their regions. In the Water Management and Public Works Act 1900 the formal division of tasks of the national water management agency and the provinces was laid down. Developments in the late 19th century restricted the official tasks of water boards, but they still had an important role in regional water management in the Netherlands. In 1992 the Water Authorities Act started the process of merging water management on the regional level, but this is still on-going, not because of more efficiency, but because of retrenchment.

The Land Reclamation and Tidal Flats Act of 1904 is an important Act regarding water management in the beginning of 20th century. Another Act that underlies one of the most relevant water projects of the Netherlands is the Zuiderzee Act of 1918 which was adopted after a flood in 1918. This Act enabled the state to dam up the Zuiderzee by the IJsselmeer Enclosure Dam (*Afsluitdijk*). The Zuiderzee (sea) became the IJsselmeer (lake).

One of the most commonly known and horrifying events in recent Dutch history is the flood disaster in 1953, also known as the North Sea Storm, which struck not only the coast of the Netherlands, but also Belgium, England and Scotland. This storm occurred in the night of Saturday 31 January 1953 and morning of 1 February 1953. It caused a flood that took the life of 1836 people in the Netherlands. 100.000 people lost all of their property. After this tragedy the Delta Committee was assigned to make a plan to protect the low-lying areas from flooding, the Delta Plan, followed by the Delta Act (*Deltawet*) in 1957. The so-called Delta Works (including the Easter Scheldt storm surge barrier and the Maeslant Barrier) were part of the Delta Plan. The Delta Act provided the necessary legal basis to execute the works that were mentioned in the Delta Plan.

The revision of the Dutch Constitution in 1983 proved to be a constitutional change of great importance for water management and public works. This revision included Article 133, fully devoted to regional water authorities. This article implied a restriction on the powers of the provinces. The Water Authorities Act (*Waterschapswet*), which came into effect in 1992, has harmonized the legislation regarding the water boards. Although differentiation was possible, the provincial by-laws almost vanished as a result of Article 133 of the Constitution and the Water Authorities Act.[9] Still, the provinces remained in charge of the supervision of the water boards. But, even more importantly, Article 133 of the Constitution and Article 2 of the Water Authorities Act together give the provinces the authority to establish, dissolve and regulate the duties and organization of regional water authorities in by-laws.[10] Two other floods in 1993 and 1995 in the Meuse delta were crucial for the flood risk management in the Netherlands.

2.2. Recent view of the responsibility of water management

Article 21 of the Dutch Constitution states: 'It shall be the concern of the authorities to keep the country habitable and to protect and improve the environment.'

Regarding water management this section contains the responsibility of public authorities for keeping the country protected against flooding, supplying enough fresh water for different functions, and protecting nature and landscape against drought and decrease of biodiversity.[11]

The responsibility of public authorities for water management is firmly enshrined in the Constitution.

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7 H.F.M.W. Van Rijswick & H.J.M. Havekes, *European and Dutch Water Law*, 2012, p. 140.

8 P. Huisman, 'Waarvan Akte: Internationale verdragen nopens de Rijn', in T. Bos et al. (eds.), *Zoals ook zee zich terugtrekt en leegte achterlaat: vriendenbundel Pieter de Wilde*, 2001 pp. 45-58.

9 Van Rijswick & Havekes, supra note 7, p. 143.

10 R. Nehmelman et al., *De constitutionele inbedding van het waterschap*, 2011, p. 13.

11 P.P.J. Driessen et al., *Beleids- en rechtswetenschappelijke aspecten van klimaatadaptatie*, Kennis voor Klimaat & Klimaat voor Ruimte (no. KvK 040/2011 & KvR 031/2011), p. 32.

The Water Act (*Waterwet*) defines its aim in Article 2.1 as follows:

> 'Prevent and, where necessary, limit flooding, swamping and water shortage while simultaneously protecting and improving the chemical and ecological status of water systems and allowing water systems to fulfil societal functions.'

The object of the Act is a combination of ecological, economic and general public interests. Protecting the population from flooding and ensuring a sufficient supply of fresh water are generally regarded as governmental responsibilities, which are divided between the central Government and regional authorities. Individuals however, also have responsibilities. The responsibilities of public authorities (central and regional) do not ensure complete safety or sufficient supply of fresh water at all times for every need, because this is impossible. The Water Act provides for standards and obligations for public authorities. On account of the provisions in the Water Act, individuals[12] should know what the responsibilities and duties of the public authorities are and when they are responsible for taking measures themselves.[13]

2.2.1. Recent development of responsibilities for water quality

In Dutch water management, it was commonly accepted that protection and improvement of water quality is the responsibility of the state (*Rijkswaterstaat*) and the regional water authorities.[14] The most important Act addressing water quality is the Pollution of Surface Waters Act (*Wet verontreiniging oppervlaktewateren*) which came into force in 1970. This Act obliges the water authorities to manage water quality in their territory. Another relevant factor that changed the view of water quality management in the Netherlands is the European Water Framework Directive.

Drinking water is a separate subject in the world of water management in the Netherlands. The Drinking Water Act (*Drinkwaterwet*) came into being in 2011.[15] This Act obliges central governmental bodies to ensure the sustainable security of the public drinking water supply. The responsibility for the supply to households and firms is entrusted to the private drinking water companies. These companies are semi-public bodies, controlled by public bodies. In practice, the great majority of the shares of the drinking water companies are owned by provinces and municipalities.[16]

The Pollution of Surface Waters Act is one of the eight statutes that were integrated in the Water Act in 2009 together with the obligations stipulated in the Pollution of Surface Waters Act.

2.2.2. Recent development of responsibilities for water safety

The historical overview shows that water safety originally was pre-eminently the main task of water authorities in the Netherlands.

The state is responsible for the coastal defence and management of the dikes and sea walls closing off the main marine inlets (*Afsluitdijk, Oosterscheldekering, Maeslantkering* etc.). The regional water authorities are responsible for the primary flood defence structures (dikes and dunes).[17] Until 2013 the costs of large investments made by the water boards were 100% covered by general means, due to the fact that the primary flood defence structures did not live up to the standards and the coastal defence.[18] In July 2013, the Water Act was changed. A new financial policy came into force in order to divide the costs more equally among the different water boards and therefore among the flood-prone areas.[19] Currently regional water authorities have to contribute part of the costs of the necessary measures to maintain the primary flood defence structures. This is part of a national programme to reinforce primary flood defence structures that do not live up to the norms of the Water Act: the new Flood Protection

12 Private individuals and companies.
13 Van Rijswick & Havekes, supra note 7, p. 6.
14 Van Rijswick & Havekes, supra note 7, p. 155.
15 *Bulletin of Acts, Orders and Decrees* (*Staatsblad*) 2009, 307.
16 Van Rijswick & Havekes, supra note 7, p. 157.
17 Van Rijswick & Havekes, supra note 7, p. 154.
18 This was regulated in the Flood Protection Programme.
19 *Bulletin of Acts, Orders and Decrees* (*Staatsblad*) 2013, 280.

Programme 2014-2019 (*nieuwe Hoogwaterbeschermingsprogramma 2014-2019*). This programme is a cooperation between different water managers. The financial provisions are part of the Water Act, but the concrete budget must be approved by the Lower Chamber. Within this programme different reinforcement projects are carried out. The programme itself is not part of the formal decision-making process. All decisions necessary for the projects in the programme to be carried out must pass the normal decision-making procedures of the Water Act.[20]

Recently, a discussion was started about multi-layered safety within the framework of the Delta Programme. Thus far, ideas have been formulated about the responsibilities of inhabitants and companies in flood-prone areas.[21] In the municipality of Dordrecht, for example, a strategy was introduced called 'the self-reliant island' (*zelfredzaam eiland*), which should be implemented in the Delta Programme 2014.[22] However, stimulating people's self-reliance does not diminish the responsibility of the state and regional authorities with regard to the prevention and limitation of flooding.

3. Organization of the water management in the Netherlands

The Netherlands has a territorial as well as a functional decentralization. Territorial decentralization refers to the transfer of public functions from the central Government to a decentralized (regional or even local) authority. Functional decentralization refers to the shift of public functions from the central Government to authorities which are completely organized to fulfil these specific tasks.[23] Water boards are a mixture of both functional and territorial decentralized authorities

3.1. Water boards

Water boards are decentralized public bodies, which are codified in Chapter 7 of the Constitution. This means that these bodies are similar to the provinces and municipalities, according to the Constitution.[24] Pursuant to Article 133 of the Constitution and Article 2(1) of the Water Authorities Act, provinces may establish, dissolve and regulate the duties and organization of regional water authorities in their by-laws. The decentralization principle is implicit in these two articles, just as it is in Article 3.2 of the Water Act. The Water Authorities Act includes the procedure to dissolve water boards. Water boards are identified as decentralized public bodies, as are provinces and municipalities in spite of the fact that they are not bodies of general administration, but of functional administration.[25] Water boards have a democratically elected general administration.

3.2. National Water Authority

Another important water manager, is the National Water Authority: Directorate-General for Public Works and Water Management (*Rijkswaterstaat*). Rijkswaterstaat is constituted by the Decree Establishing the Directorate General for Public Works and Water Management 2013 (*Instellingsbesluit directoraat-generaal Rijkswaterstaat 2013*) and can be defined as an Agency.[26]

3.3. Provinces

In the Water Act, provinces also have tasks regarding water management despite the fact that they are no water authorities according to the Water Act. Provinces are decentralized public bodies, codified in the Provinces Act (*Provinciewet*). They have a democratically elected Provincial Council (*Provinciale Staten*) and an indirectly elected Provincial Executive (*Gedeputeerde Staten*). The provinces have seven main

20 Figure 2 (Section 4.1) shows the relationship between different flood risk plans and programmes.
21 B. Kolen, *Certainty of uncertainty in evacuation for threat driven response. Principles of adaptive evacuation management for flood risk planning in the Netherlands*, 2013, Chapter 6.
22 See Section 4.3.2.
23 M.C. Burkens, et al., *Beginselen van de democratische rechtstaat. Inleiding tot de grondslagen van het Nederlandse staats- en bestuursrecht*, 2012, p. 286.
24 Nehmelman, supra note 10, p. 15.
25 Nehmelman, supra note 10, p. 35.
26 Decision of the Minister of Infrastructure and the Environment of 11 March 2013, RWS/SDG-2013/12897, *Government Gazette* (*Staatscourant*) 2013, 7827.

tasks, including spatial planning, water management, environmental and climate issues and regional infrastructure. They supervise municipalities and water boards regarding some issues. One important duty of the provinces is the supervision of primary flood defences and regional water authorities, the drawing up of regional water plans and granting permits for 'larger scale' groundwater abstractions.[27]

3.4. Municipalities

According to the Water Act, municipalities are not water authorities, but they are responsible for the collection and transport of urban waste water (Paragraph 4.8 and 10.5 Environmental Management Act – *Wet milieubeheer*) and rainwater and groundwater in urban areas (Paragraph 3.1 Water Act). In their spatial zoning plans,[28] they have to include a section on water, which explains what the impact will be of the provided development on the water system. Municipalities have other specific water management duties, especially relevant to flood risk management, i.e. crisis management.

3.5. Security regions

The organization of the water management is regulated in Chapter 3 of the Water Act. The main responsibilities for water management are given to the national authority, Rijkswaterstaat, and the water boards. In case of flooding also regional security regions are important, when it comes to evacuations.

The 25 security regions are responsible for regional emergency and crisis management. Together with the affected water boards and the districts of Rijkswaterstaat they have to set up regional risk profiles of flood risk. They also have to make policy plans including the description of the intended operational performance of the services and organizations of the security region, the regional police and the municipalities regarding disaster and crisis management, and crisis plans, which contain the description of the organization, tasks, powers and authorities and responsibilities relating to disaster and crisis management. The mayor of the largest city is the chair of the security region.

4. Flood risk management in the Netherlands

4.1. Traditional measures

In the Netherlands, a defensive strategy against flooding is still leading. This is expressed in the strengthening of dikes as the main approach in flood risk management. The Water Act defines 'primary flood defences' as: 'flood defence structure that offers protection against flooding by virtue of the fact that it forms part of a dike ring or is situated in front of a dike ring' (Article 1.1). A dike ring is not defined by the Water Act, but a good definition is 'a connected system of primary flood defence structures that, either alone or in combination with high ground, provides protection against flooding for a particular area (the dike protected area), primary by external water'.[29] External water is defined in Article 1.1: 'water in a body of surface water, the level of which is directly influenced by high storms surges, high water levels in one of the major rivers, high water levels in the IJsselmeer or the Markermeer or a combination thereof.'

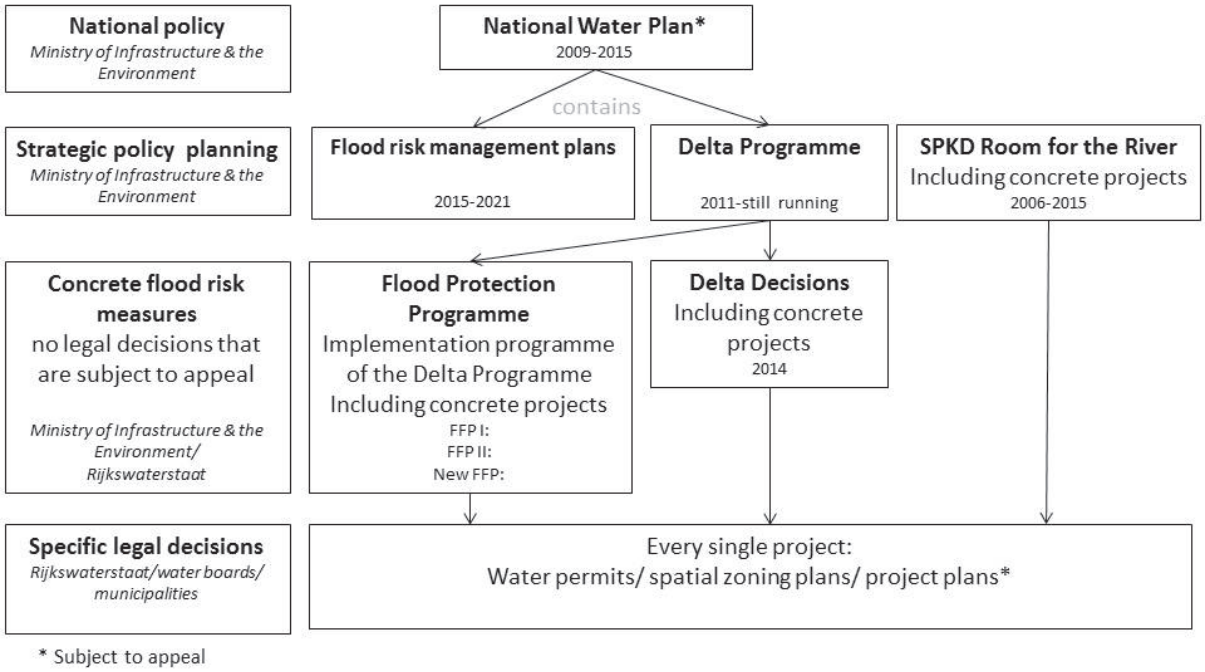
Paragraph 2.2 of the Water Act includes the standards for water safety in each dike ring and flood defence structure – which are laid down in two Annexes of the Water Act. These standards are based on the average annual probability that the highest high water level that a primary flood defence structure is designed to withstand will be exceeded (chance of exceeding – *overschrijdingskans*). Safety standards vary in different dike rings, from 1/250 (Limburg) to 1/10,000 (Randstad). All primary flood defences have to be assessed every six years (Article 2.12 Water Act). The competent water authority has to report the state of the flood defence structures in its competent area to the Provincial Executive, which in turn reports to the Minister of Infrastructure and the Environment, who will report to Parliament. If the

27 Van Rijswick & Havekes, supra note 7, p. 201.
28 A spatial zoning plan is a legal instrument that includes building and use possibilities and restrictions in a certain geographical area.
29 Van Rijswick & Havekes, supra note 7, p. 266.

flood defence structures do not meet the standards, the competent authority has to take the necessary measures to fulfil its obligations.[30]

Regional flood defence structures have their own standards, laid down in provincial by-laws. The Association of Provincial Authorities (*InterProvinciaal Overleg*) and the Association of Water Boards (*Unie van Waterschappen*) are trying to make the standards and the assessment as uniform as possible, but there can be differences per province, because the standards are not laid down in a general law.

Figure 2 Relationship between different flood risk management plans and programmes



The periodic assessments of flood defence structures always reveal primary flood defences that do not live up to the standards. The most recent assessment took place in 2011. The most crucial flood defence structures that do not meet the standards must be reinforced. For this reason the Flood Protection Programme (*Hoogwaterbeschermingsprogrammma*) has been developed. This programme grants subsidies to the water authorities in whose area dike reinforcements have to take place. In the period 2014-2019 the New Flood Protection Programme (*nieuwe Hoogwaterbeschermingsprogrammma*, nFPP), has the assignment to reinforce 731 kilometres of dikes and 238 flood defence structures, such as dams and sluices. This can be seen as an adaptive approach which provides for continuous monitoring followed up by reinforcements of weak links in the flood safety system.

4.2. Mitigation measures

After two severe floods in 1993 and 1995 the awareness grew that only investing in dikes was no longer sufficient. Extremely high river discharges will occur more frequently in the future. Hence, it is necessary that the rivers can discharge the predicted greater volumes of water without flooding. Since the Spatial Planning Key Act Room for the River (*Planologische Kernbeslissing Ruimte voor de Rivier*), new projects were taken into consideration, such as the relocation of dikes, the permanent inundation of polders or depolderising, increasing the depth of flood channels, the removal of obstacles and the construction of flood bypasses. These measures were combined with traditional flood risk management. The Room for the River project targets the areas around the Rhine branches running from Lobith to the Ketelmeer and to the sea at the Maeslant storm surge barrier and the Haringvliet sluices (Upper Rhine, Pannerdensch

30 Van Rijswick & Havekes, supra note 7, p. 266.

Canal, IJssel, Lower Rhine/Lek, Waal, Merwede, Nieuwe Maas, Oude Maas, Hollandsch Diep and Haringvliet) and the diked section of the Maas downstream from Hedikhuizen (Bergsche Maas, Amer), as well as the Volkerak, the Zoommeer and the surrounding area.[31] A Spatial Planning Key Decision (SPKD) is an instrument concerning large projects. This Decision is not legally binding, but describes the broad outline of the project. Spatial plans of decentralized authorities should be in accordance with the broad outline of this decision. In case of the SPKD Room for the River, for each project, spatial zoning plans, water permits and project plans are necessary for the projects to be carried out.

Another important Act in the shifting policy of flood risk management in the Netherlands is the new Delta Act (*Deltawet*, which is part of the Water Act) which came into force on 1 January 2012. This new Delta Act allows the Delta Plan to be carried out.

The Delta Act makes it obligatory to produce a new Delta Programme every year. It also provides for a Delta Fund, which provides the necessary funds to carry out the Delta Programme and describes he role of the Delta Commissioner (see Section 4.3.2).

4.3. Recent developments

4.3.1. Floods Directive

An important European Directive regarding flood risk management, is the Floods Directive (FD).[32] This Directive was initiated following more than 100 severe floods in Europe between 1998 and 2002, including the catastrophic floods along the Danube and Elbe rivers in 2002. Between 1998 and 2004, floods caused some 700 fatalities, the displacement of about half a million people and at least EUR 25 billion in insured economic losses.[33] The Netherlands and France initiated the drafting of this Directive, which came into force in 2007. The objective of the Floods Directive is to establish a framework for the assessment and management of flood risks, aiming at the reduction of the adverse consequences for human health, the environment, cultural heritage and economic activity associated with floods in the Community (Article 1) and is based on the river basin approach of the Water Framework Directive (WFD).[34]

Two important definitions are supplied in Article 2:

- *Flood*: the temporary covering by water of land not normally covered by water. This shall include floods from rivers, mountain torrents, Mediterranean ephemeral water courses, and floods from the sea in coastal areas, and may exclude floods from sewerage systems;
- *Flood risk*: 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.

The main instruments the FD provides for are the preliminary risk assessment, the flood risk maps and flood hazard maps, and the flood risk management plans. The preliminary risk assessment should be based on available or readily derivable information, such as records and studies on long-term developments, in particular impacts of climate change on the occurrence of floods, to provide an assessment of potential risks (Article 4(2) FD). The flood hazard maps are to cover the geographical areas which could be flooded according to the scenarios of a flooding with a low, medium and high probability (Article 6(3) FD). The flood risk maps are to show the potential adverse consequences associated with flood scenarios (Article 6(5) FD). The flood risk management plans address all aspects of flood risk management focusing on prevention, protection, preparedness, including flood forecasts and early warning systems, and taking into account the characteristics of the particular river basin or sub-basin (Article 7(3) FD).

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31 *Planologische Kernbeslissing Ruimte voor de Rivier, vastgesteld besluit 19 december 2006*, p. 8.

32 Directive 2007/60/EC of the European Parliament and of the Council of 23 October 2007 on the assessment and management of flood risks, OJ L 288, 6.11.2007, p. 27.

33 COM(2004) 0472 final.

34 Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy, OJ L 327, 22.12.2000, p. 27.

In the Netherlands, the FD has been implemented very soberly and expediently, because water safety in the Netherlands is firmly institutionalized in law, policies and policy programmes.[35] All obligatory instruments mentioned in the FD were given to the authority that was already competent in the relevant field. The Netherlands decided not to carry out the preliminary risk assessment, because the relevant information was already available to determine the areas in which a significant flood risk existed, based in part on the former Flood Defence Structures Act. Because of this decision maps and plans cover the whole country.

Flood risk maps and flood hazard maps

Article 4.9 of the Water Decree (Waterbesluit) regulates the responsibility for the production and electronic publication of the flood risk maps and flood hazard maps, and keeping them up-to-date. Every six years (starting from 2013) the provinces have to revise the maps. The provinces, which were already responsible for general risk maps, are also responsible for the administration of the flood risk maps and flood hazard maps. The initial flood risk maps and flood hazard maps were made by the national authority, based on information supplied by the competent water authorities and the provinces.

Flood risk management plans

The flood risk management plans are a new addition to the existing plans. Here the national authority also draws up the initial plans. The information is supplied by the regional water authorities and provinces. The Netherlands has to produce flood risk management plans for the river basins Meuse, Rhine, Ems and Scheldt. These four flood risk management plans are – together with the river basin management plans, based on the European Water Framework Directive – part of the National Water Plan. Regional issues of flood risk management are part of the regional water plans.[36] The responsibilities for managing these plans are part of the existing responsibilities of the water managers. Their plans have to be revised every six years starting in 2015.

The explanatory memorandum of the Water Decree states that the role of market parties in flood risk management has to be included into the flood risk management plans.[37]

The FD does not influence the existing responsibilities of public authorities in the field of flood risk management. Existing tasks are extended.

4.3.2. Delta Programme & multi-layered safety

In 2007, the Dutch Cabinet set up a committee chaired by former Minister Cees Veerman to advise the Government about the way in which the Netherlands needed to improve its water safety and keep the freshwater supply in good order, taking into account climate change and social developments. In 2008 the committee made some recommendations. The major recommendation was the need for a Delta Act. This Delta Act should provide for a Delta Programme that is necessary to guarantee the safety of the Netherlands against high water and ensure a good freshwater supply. It should also constitute the legal basis for the Delta Fund, which can be used to finance the Delta Programme. The Act provides for the appointment of a Delta Commissioner. His task is to ensure that a Delta Programme is drawn up and implemented every year and that progress reports are submitted. So, the objective of the Delta Programme is to protect the Netherlands against flooding and to ensure an adequate freshwater supply in the future. The Delta Act is incorporated in Chapter 4a and Paragraph 7.4a of the Water Act. Since the Delta Act came into effect, the function of the Delta Commissioner has been called into being. The Delta Commissioner is a government commissioner who acts under the direct responsibility of the Minister of Infrastructure and the Environment. The Delta Commissioner guides the process of the Delta Programme, for which he annually submits a proposal. He is responsible for the content of the Programme, which contains the measures to be taken in order to guarantee the safety of the country against high water and ensure a good freshwater supply. The Delta Programme is divided into nine sub-programmes, three

35 D.L.T. Hegger et al., *Flood Risk Management in Europe – similarities and differences between the STAR-FLOOD consortium countries*, 2013, p. 76.

36 Section 4.5 and 4.11 Water Decree.

37 *Bulletin of Acts, Orders and Decrees* (*Staatsblad*) 2009, 548, p. 46.

national programmes (Safety, Fresh Water, and New Construction and Restructuring) and six regional programmes (Rhine Estuary-Drechtsteden, South-Western Delta, IJsselmeer Region, Rivers, Coast, Wadden Region). The content of these programmes is a broad outline which is not legally binding. The so-called Delta Decisions, which will arise from the Delta Programme, will be more concrete and form the basis of concrete measures and projects which have legal protection. The Delta Programme 2013 pays attention to multi-layered safety. Prevention (through defence) is the first and most important layer. The second layer is limitation of the effects of flooding by means of spatial planning of the area behind the dikes. The third layer is emergency management. These Delta Decisions, which are policy decisions concerning the main policy directions, are currently in preparation and will be presented to Parliament in 2014.

In the 'April letter' of 2013 of the Minister of Infrastructure and the Environment, the Minister proposed to implement the risk approach of the Floods Directive in the Dutch standards.[38] In the Water Act standards are based on the average probability of exceeding a certain water level. In the flood risk approach standards, the aim is to supplement this probability with the probability of flooding in a dike-protected area (probability x consequence = flood risk).[39] In the April letter the Minister sets out her goal of water safety policy. This aim is threefold:

- *A basic safety level will be guaranteed for every inhabitant who lives behind a dike.* Tolerable individual risk ('the individual loss of life due to flooding') will apply throughout the Netherlands, except for the areas outside the dykes. No-one will be worse off in terms of safety or flood risk management. The tolerable individual risk may not be higher than 1 to 100.000 per year (10^{-5}). Emergency management is of vital importance to obtain this objective.
- *The prevention of social irretrievable breakdown because of large groups of casualties and/or extensive economic damage*. Areas with a high risk of large groups of casualties and/or extensive economic damage require investments beyond the standard investments made to guarantee the basic safety level.
- *Special attention must be paid to the consequences of flooding to vital infrastructure.*

In addition to the threefold aim in the April Letter, the Minister also advocates the aforementioned principle of multi-layered safety: prevention, spatial planning and emergency management.

Together with the threefold aim of the Minister, further details of the multi-layered safety will be provided for in the Delta Decisions entitled 'Water Safety' and 'Spatial Adaptation'. Currently the concepts are not disclosed to the public. It is possible and expected that economically important areas (like main ports) will be attributed a higher safety level than other parts of the country.

Concluding remarks

In this section it has become clear that flood risk management has been developing for the past decades. Since the establishment of the first water boards onwards, integration has been taking place and the merger of water boards is still on-going. The Water Act is the main Act that provides for duties and tasks concerning water and flood risk management. Even the recent Delta Act has been integrated into the Water Act. Another aspect that should be noted is that recently new trends have been set and new instruments have been introduced. The implementation of the Floods Directive has resulted in the production of flood hazard and risk maps and flood risk management plans. Other recent developments are the introduction of new safety standards as well as a mitigated and a multi-layered safety approach. These developments can be described as a disintegration of responsibilities regarding flood risk management. These recent developments will have major impact on the Dutch compensation regime for two reasons: a) the regime is closely linked to water and flood risk management and b) most measures taken to diminish flood risk influence private property. In the following sections, the developments are described concerning different compensation regimes in the Netherlands and the connection between the developments in both fields and their mutual influence.

38 Letter from the State Secretary for Infrastructure and the Environment, *Kamerstukken II* 2011/12, 31710, no. 26. This development is part of the Delta Programme 2013.

39 Van Rijswick & Havekes, supra note 7, p. 268.

5. No-fault liability in the Netherlands

5.1. Concise historical development of no-fault liability[40]

The National Act for the Batavian People by Napoleon of 1798 (*Staatsregeling voor het Bataafsche Volk*)[41] included a provision that obliged the state to compensate those who would be expropriated. In 1810 the first Expropriation Act (*Onteigeningswet*) came into force. The Zuiderzee Support Act 1925 (*Zuiderzeesteunwet*) included a compensation provision. The largest development in no-fault liability happened in the 20th century. In the 1920s a discussion was started about no-fault liability. Instigator of this discussion was Prof. J.H.P.M. van der Grinten. Compensation of damage was in most cases related to property rights. Some Acts included a regulation, but until the 1950s this was highly fragmented.[42] After the North Sea Storm in 1953 the Disaster Relief Fund (*Rampenfonds*) compensated the damaged parties, providing them with funds to restore their properties to pre-storm conditions. Other Acts dating from that period are the Forest Act of 1961 (*Boswet*), the Spatial Planning Act of 1965 (*Wet Ruimtelijke Ordening*) and the Monuments Act of 1961 (*Monumentenwet*). They included a compensation regulation as well. Only decisions based on one of these Acts opened the way for compensation. However, not every damage-causing decision was based on an Act that included a compensation regime. For damage caused by such a decision, the damaged party had to resort to a civil procedure in order to be compensated. This was considered to be undesirable, because the lawfulness of the decision was not at stake, only the question of compensation was challenged. Van der Gouwe, at the time working at Rijkswaterstaat, developed a regime called 'compensation by the administration' (*bestuurscompensatie*). He filled the gap between damage caused by a decision based on an Act that provided for compensation and damage caused by other lawful decisions or lawful acts. The regime of compensation by the administration has been developed further in case law by the Council of State and the Supreme Court.[43] Because of the case law, it was generally accepted that a damaged party can ask for compensation, whether a regulation existed or not. This extralegal compensation is based on the French principle of equality before public burdens (égalité *devant les charges publiques*). In 1990 Van der Gouwe codified this compensation by the administration in the 'no fault-liability regulation' by Rijkswaterstaat (*Regeling nadeelcompensatie Rijkswaterstaat*).[44]

5.2. Recent no-fault liability regimes in the Netherlands

The Rijkswaterstaat regulation was renewed in 1999, entitled: Regulation of No-Fault Liability of the Ministry of Transport, Public Works and Water Management 1999 (*Regeling Nadeelcompensatie Verkeer en Waterstaat 1999,* Regulation of V&W'99). This regulation is the basis of a number of compensation of damage decisions if the damage is caused by measures to prevent flooding. Before being merged into the Water Act, different Acts regarding water management included compensation provisions based on the égalité principle. An exception is the Groundwater Act (*Grondwaterwet*), which provided for full compensation instead of partial compensation, as the other Acts (and the Regulation of Rijkswaterstaat). By implementing the Groundwater Act as part of the Water Act, the leading principle is still full compensation for damage caused by groundwater management. The starting point of this compensation regulation is different from that of the other ones. Here the license holder should compensate the damage caused by them, which most of the time is not a public authority. The general interest is not always at stake in case of groundwater extractions. Therefore this divergent regime still exists.

Since the Water Act came into force, Paragraph 7.3 provides the substantive framework for the compensation of damage as a result of a lawful exercise of a power or responsibility exercised in water management. This means that this regime applies not only to the central Government (Rijkswaterstaat), but also to the water boards and even to the provinces and municipalities if they are conducting activities

40 This Section only describes some large developments. If interested, I suggest you read: M.K.G. Tjepkema, *Nadeelcompensatie op basis van het égalitébeginsel. Een onderzoek naar nationaal, Frans en Europees recht*, 2010.

41 The Netherlands was called the Batavian Republic.

42 For more elaboration on the general discussion: Tjepkema, supra note 40, Section 2.6.

43 For example: ARRvS 12 January 1982, *AB* 1982/299 *(Paul Krugerburg I)*, HR 19 January 1991, *NJ* 1992, 638 (*Leffers*).

44 *Government Gazette* (*Staatscourant*) 1990, 251.

in the field of water management – although municipalities do not belong to the category of water managers. The Water Act has no procedural provisions, which means that every water board and every municipality has to formulate its own regulation concerning this procedure.

In addition to the Water Act and the different regulations in the field of water management, the Spatial Planning Act is relevant, because it has its own regime in the compensation of damage caused by planning decisions, such as a spatial zoning plan, so-called 'planning blight' (*planschade*). The compensation regime – revised in 2008 in the Spatial Planning Act – has partially been brought into line with other no-fault liability regulations. Before 2008 the Spatial Planning Act had no link with the égalité principle, but in 2008 this principle was incorporated into the new compensation regime regarding damage caused by planning decisions. At this moment there is a uniform no-fault liability regulation in the General Administrative Law Act (*Algemene wet bestuursrecht*, GALA). Despite the fact that the Lower and Upper Chambers of Parliament have approved this regulation, it has not come into force yet.[45]

In the Dutch system of no-fault liability, the document in which a decision that will cause damage is formulated is seen as the cause of the damage, and not the actual damage occurring as a result of the effectuation of the decision. In most cases only theoretical damage is the subject of compensation.

5.3. Principle of égalité devant les charges publiques

The égalité principle – or a derivative of it – is acknowledged in several countries, for example in France, Belgium and Luxemburg.[46] The basic assumption of this principle is that compensation is granted to those who have endured a disproportionally large burden or loss caused by activities pursued by the administration for the common good.[47] It is relevant that the damage must be caused by a conscious act. The principle can be applied only if there is a balance of interests.[48] A burden caused by lawful activities should not be borne by a relatively small group, but should be divided fairly over the society that will benefit from the actions, because the damage-causing activities are pursued in the general interest. However, this does not mean that all damage will be compensated on the basis of the égalité principle. Only damage that is disproportionally great in comparison to others that are in a similar situation will be compensated. In a society every inhabitant benefits from actions taken by the administration in the general interest. So it is reasonable that every inhabitant should bear an equal part of the burden. This part of the burden is called the *normal social risk*. In order to find out whether a burden is disproportionally large and is not covered by the normal social risk, two criteria have to be fulfilled: the loss must be *abnormal* and it must be *special*.

5.3.1. Abnormal burden

As stated above, compensation is only granted to those who have endured a disproportionally large burden or loss. In other words, the burden must be abnormal. To assess whether the burden is abnormal, one must know what kind of burden is normal. In literature and case law it is accepted that every private party and company in a country should accept a certain amount of discomfort of the normal and correct behaviour of the state, because they are part of the society and benefit from the actions of the state.

When assessing the abnormal burden, one should take into account different relevant aspects: the nature of the damaging event, the gravity and extent of the damage, the nature of the interest that is at stake (of citizens or companies), and the foreseeability of the measure. The abnormal burden can contain a threshold (a percentage of the value of property or the average yearly income that will remain for the damaged party) or a deduction (a percentage that ought to be deducted from the established damage). When using a threshold or deduction the competent authorities distinguish between citizens and companies. The distinction is expressed in the formulation of the abnormal burden: it is called 'normal social risk' for private parties and 'normal business risk' for companies. Until 2012 the Minister of Infrastructure and the Environment used thresholds from 2% (for private parties) to 15% (companies)

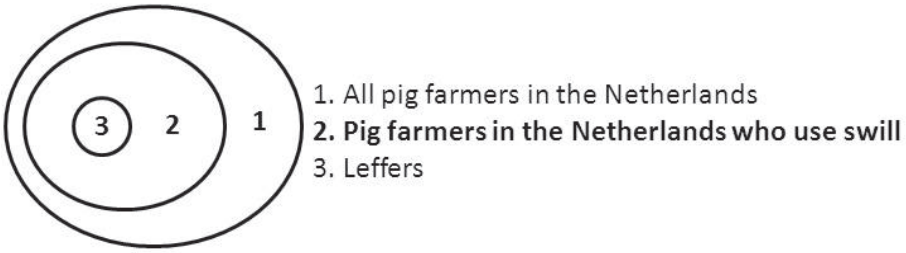
45 *Bulletin of Acts, Orders and Decrees* (*Staatsblad*) 2013, 50.
46 Tjepkema, supra note 40, Section 13.3.2.
47 D. Fairgrieve, *State Liability in Tort. A comparative law study*, 2003, p. 144.
48 Tjepkema, supra note 40, p. 968.

without proper motivation. In a judgment, the Council of State ruled that the competent authority must not use a threshold without any good motivation, so the normal social and business risks that are used are now more differentiated than before.[49]

5.3.2. Special burden

If the damage-causing decisions affect a small group, they are considered to have a special burden. In order to assess whether a small group is affected, a reference group must be distinguished. The reference group consists of people who have been affected by the damage-causing decision, but in a less dramatic way. If the claimant has suffered a burden that is disproportionally heavy in comparison with the reference group, he and his claim are considered to be special.

Figure 3 Special burden



A judgment of the Dutch Supreme Court, *Leffers,*[50] may illustrate the criterion of the special burden. In this case the Dutch Government forbade the feeding of pigs with swill, because feeding with swill might increase the risk of hog cholera. In theory, this action affected all pig farmers in the Netherlands, because none of them could use swill any longer (Group 1 in Figure 3). Some pig farmers of this first group, who had never used any swill, were not affected by the decision. However, pig farmers who did use swill were more strongly affected by the decision of the Government than the former group. So the decision affected Group 2 much more strongly than Group 1, because these farmers experienced damage. That is why they could serve as a reference group (Group 2). One pig farmer (Leffers) had focused his operational management on feeding with swill only. The prohibition obliged him to reorganize his whole business, causing him to suffer great damage. The Supreme Court ruled that in this case, Leffers' burden because of the new prohibition was disproportionally large in comparison to others who were in a similar situation (the reference group).

5.3.3. Foreseeability or risk acceptance

Another very important criterion is foreseeability (*in concreto*) or risk acceptance. Both formulations are common in literature. In this article 'risk acceptance' will be used, because it prevents confusion, in contrast to foreseeability, as foreseeability *in abstracto* plays a role in assessing the normal social risk.

The crucial moment for assessing risk acceptance is the time of investment. In order to assess risk acceptance, the question must be answered whether the damage-causing decision could have been foreseen by the damaged party at the time of the investment (the moment that one decides to buy property, to enlarge a company or not to use certain possibilities (e.g. when a spatial zoning plan allows certain developments and the owner does not use these possibilities).

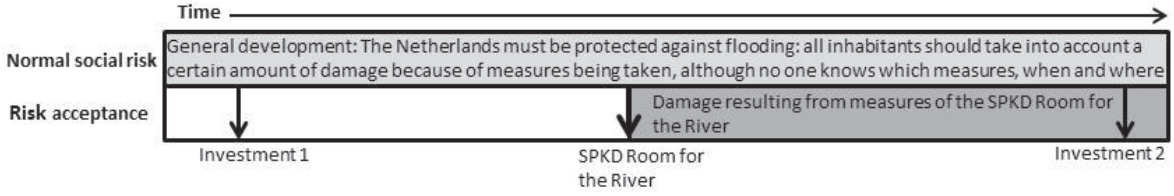
Figure 4 shows the difference between the normal social risk and risk acceptance on a timeline. Everyone in society should be aware that measures will be taken in order to protect them against flooding, although no one knows what form these measures will take, and when and how they will be executed. In the course of time, all inhabitants might encounter some disadvantage because of these general developments. These general developments will be assessed within the normal social risk. However,

49 Council of State 5 December 2012, *JB* 2013, *Gst.* 2013, 12, *BR* 2013, 46.
50 HR 19 January 1991, *NJ* 1992, 638 (*Leffers*).

when measures take the form of concrete plans it is important to know when the decision to invest was made in order to assess whether damage falls under risk acceptance or not.

In Figure 4, Investor 1 will be compensated for part of the damage caused by concrete measures to mitigate flood risks under the SPKD Room for the River, because the damage that will be caused by the planned concrete measures was not foreseeable (no risk acceptance). But the damage will not be fully compensated, because part of it falls within the scope of the normal social risk. Investor 2, however, will receive no compensation whatsoever, because he could have foreseen the concrete damage (and he is considered to have accepted the risk of the damage).

Figure 4 Distinction between normal social risk and risk acceptance



5.3.4. Not otherwise guaranteed

Another aspect is the question whether compensation of damage is otherwise guaranteed. If for example someone is insured for certain damage and the insurance company will compensate, the administration will not compensate the same damage as well. In some cases (a part of) the property that has been damaged will be expropriated. Damage to property that has been expropriated will not be compensated either.

6. Substantive no-fault liability in flood risk management

6.1. Water Act

As mentioned above, the Water Act plays a large role when it comes to no-fault liability in water management in general. The same applies to flood risk management.

The Water Act elaborates on the no-fault liability system as developed by the practice of Rijkswaterstaat and case law over the years.

The égalité principle forms the basis of this regime and is expressed in, for example, the text of Article 7.14 Water Act: 'any person who suffers or will suffer damage as a consequence of the lawful exercise of a water management duty or competence shall, at his request, be awarded compensation by the administrative authority concerned where such damage should not within all fairness remain for his account and where compensation is not or not sufficiently otherwise guaranteed.'

Similar provisions are found in Regulation V&W'99, the GALA and various regulations of water boards. As long as Article 4:126 et seq. GALA has not come into force, Article 7.14 of the Water Act is the legal framework for compensation of damage caused by measures to prevent flooding. A special position is given to the Room for the River Regulation (hereafter: RRR). The Room for the River project consists of different measures to give water more space in order to bring the protection of the riverine area to the required level. Although it is not common, this project has its own compensation regulation, the Room for the River Regulation.[51]

6.2. Room for the River Regulation

This Regulation differs from the general regulation of the Water Act, but is of great importance with respect to compensation measures regarding the Room for the River project. It is good to note that the RRR was formulated before the Water Act came into force. At the time, there was no general regulation and the regulation of the Ministry of Infrastructure and the Environment did not fulfil the needs of the project. One of the characteristics of the project was that the measures were carried out by different

51 *Government Gazette* (*Staatscourant*) 2009, 82.

competent authorities, meaning that the competent water board carried out the necessary project plans and permits, the municipality provided for the spatial permission in a spatial zoning plan and the provinces were responsible for the regional spatial coordination. Consequence of this method of collaboration was that damage was caused by different decisions and that different authorities were competent to decide on compensation claims. This was, of course, undesirable, so the RRR has as its main objective the harmonization of the different compensation *procedures*. It does not contain any substantive provisions (as the Water Act and the Spatial Planning Act do). The RRR stated that the compensation procedures are carried out by the Minister of Infrastructure and the Environment but the substantive provisions of the different regulations (Regulation of V&W'99, Spatial Planning Act, regulations of municipalities) must be applied, so the RRR only created a so-called 'single office': damaged parties can submit damage claims with the Minister, who will take care of the correct procedure and substantive norms, even if these substantive norms differ per measure.

It is important to know that because of the RRR different substantive compensation regimes exist at this moment: if a measure is carried out as part of the Room for the River project, the provisions of the Spatial Planning Act are possibly applied, while for a similar measure outside the scope of the project the material provisions of the Water Act are applicable (see Section 6.3).

6.3. Cause and damage

It is important to know what kind of damage can occur because of flood risk protection measures. The text of Article 7.14 Water Act is very broad. All damage – if resulting from a water management duty or competence – can be brought under this article. As stated in Section 5.2, in the Netherlands it is accepted that not the actual damage, but the administrative decision that is necessary to carry out the damage-causing action, is the cause of the damage. Figure 5 illustrates what kind of damage mostly results from what kind of measures under three different laws.

Figure 5 Legal framework to compensate damage caused by flood protection measures

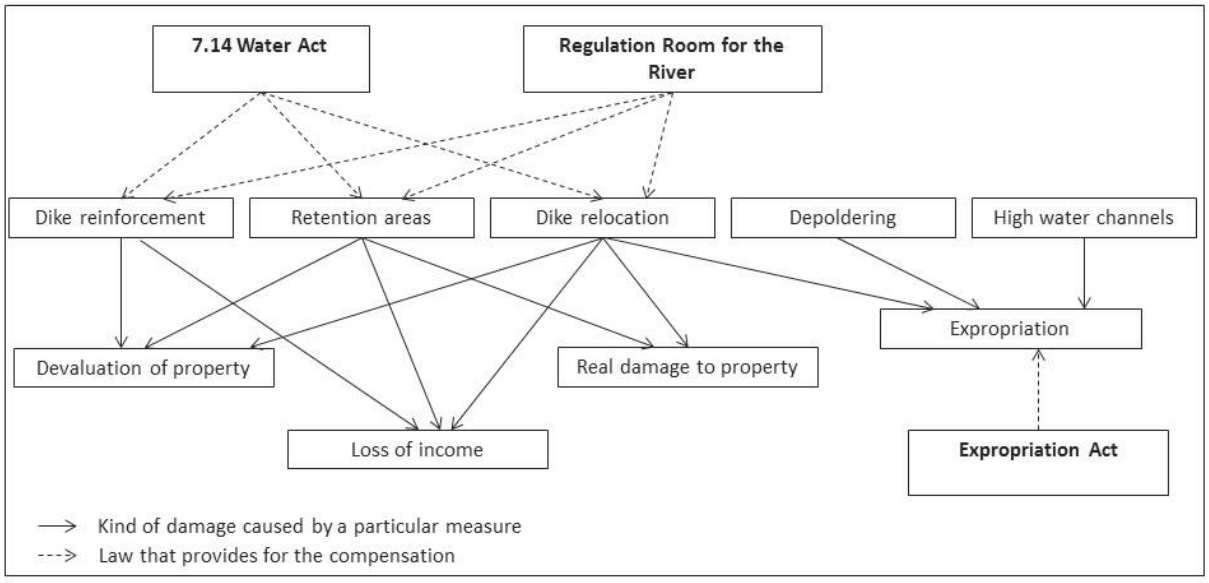


Figure 5 shows three laws that can provide for *compensation* regarding damage caused by measures to prevent flooding. The striped lines only refer to the legal basis for compensation of damage caused by these measures. They do not refer to the legal basis of the competence to carry out the measures, which is regulated in the Water Act.

The Expropriation Act (*Onteigeningswet*) is located separately in the figure, because this Act is not part of the regular compensation regimes. Only when a measure causes so much damage that the

property becomes useless to its owner will the property be expropriated. Expropriation falls outside the scope of this article, but for comprehensiveness it must be mentioned in the figure.

6.3.1. Devaluation of property

Three kinds of measures can cause this type of damage: reinforcement of dikes, designation of retention areas and dike relocation. Devaluation occurs when property – a house, agricultural land, or company premises – loses (part of) its value because of a certain measure. This happens when existing dikes are heightened in order to reinforce them. This can lead to a loss of free view from a private property, or loss of visibility of company premises. When a dike is reinforced, this may have consequences for agricultural land. If, for instance, the protection zone of the dike is broadened the water manager can impose restrictions of use. The designation of retention areas can also cause devaluation of property – especially agricultural land and in some cases campsites. When a retention area is designated, this must be indicated in a spatial zoning plan. Dike relocation may cause devaluation when a property that was located inside the dike, becomes located outside the dike. Even if the level of safety does not change, this measure will lead to devaluation. If the property becomes useless because of the relocation it will be expropriated.

Based on the Regulation of Room for the River & Spatial Planning Act

The distinction of legal basis (between Water Act and RRR) is relevant, because the measures of the Room for the River project are still carried out. Most of the measures causing devaluation of property must be part of a spatial plan. Because the RRR does not change the material legal framework for compensation, the measures being part of a spatial plan must be considered as the cause of damage and therefore the damage is considered to be planning blight. Hence, the material provisions of the Spatial Planning Act must be applied. This can lead to the outcome of the decision-making process being different from that for similar measures that are carried out outside the scope of the project, because the normal social risk in the two regimes is different.

Based on the Water Act

As stated above, most measures that cause devaluation must be part not only of an instrument of the Water Act (permit, project plan), but also in a spatial plan (spatial zoning plan). Because this can lead to difficult situations in which the competence of the compensating authority may be debated, Article 7.16 of the Water Act states that the Spatial Planning Act is not applicable if a damage-causing decision is taken in the field of water management and damage can be compensated based on Article 7.14 of the Water Act. Such a situation may arise when a retention area is designated. So the damage will be assessed with due regard to the provisions of the Water Act. This is a more desirable situation than what the RRR provides for, because it is clear how damage caused by a measure taken within the framework of water management is dealt with.

6.3.2. Loss of income

The second type of damage is a loss of income. If – in most cases – a company temporarily has decreased sales or no sales at all, this is called a loss of income. Increase of transport costs can lead to a loss of income as well. This can be the case when a road is closed because of reinforcement works and the company is not accessible. The designation as well as the operationalization of a retention area can cause a loss of income. The designation can lead to restrictions of use, which can also lead to a loss of income. Loss of income caused by the operationalization of a retention area (when it is flooded or swamped deliberately in the event of high water), is called 'real damage to property'. Dike relocation can lead to a loss of income as well. If roads are relocated, some restaurants or other companies, like ferryboats, may have fewer customers and therefore suffer a loss of income.

Based on the Regulation of Room for the River & Spatial Planning Act
For loss of income, as for devaluation of property, a distinction must be made to determine whether the measure causing the loss is carried out within the scope of Room for the River or not. If so, the measure must be part of a spatial plan, the damage is considered to be planning blight and the substantive provisions of the Spatial Planning Act must be applied.

Based on the Water Act
If the measure is carried out outside the scope of Room for the River, the applicable instrument of the Water Act (permit, project plan) is considered to be the cause of damage. Therefore the damage will be assessed with due regard to the provisions of the Water Act.

6.3.3. Real damage to property

Article 7.15 of the Water Act states: '(…) damage shall also be defined as damage in connection with swamping and flooding where these are the consequence of the relocation of a flood defence structure or of other measures intended to increase the conveyance or storage capacity of water systems.' As a flood protection measure, dikes can be relocated and retention areas can be designated. In most cases, grounds which are designated as a retention area are owned by farmers. When designated as retention area grounds can be flooded or swamped deliberately in the event of high water. This is called the operationalization of retention areas. As a consequence, (mostly) agricultural ground can be damaged, in the sense that harvest is lost or soil texture is damaged. This type of damage differs from the two mentioned above, because it is not 'theoretical' damage: the property is actually damaged. In view of this, some water boards have formulated specific regulations, which only focus on real damage by flooding and swamping.[52] The basic principle of these regulations is full compensation of damage to property. For agricultural damage, norms have been included in most regulations. So these regulations differ from the general regulations based on the égalité principle, in which disproportionally damage is compensated. For this type of damage, only the Water Act and the regulations of water boards are applicable.[53]

6.3.4. Expropriation

Expropriation takes place when a property is required to become part of a body of water, whether through depolderising or for the digging of high water channels. However, expropriation falls outside the scope of this article because expropriation is not a matter of damage but of removing the legal ownership of property.

6.4. Substantive provisions

6.4.1. Water Act

Considering the fact that Article 7.14 of the Water Act is based on the égalité principle, the normal social risk plays a large role in the decision about compensation claims. This means that the abnormal and special burden must be assessed.[54] Risk acceptance and the possibility that the damage is otherwise guaranteed must be assessed as well.

Looking at case law, the Council of State ruled that measures taken to prevent flooding must be seen as a normal development that every inhabitant should take into account. A good example is the judgment of 22 May 2013.[55] In this judgment a private limited company claimed to have a loss of income regarding two hotels because of coastal reinforcement works and asked the competent water board to compensate the loss. The Council of State ruled that coastal reinforcement works should be seen as a normal social development in the general interest, even though the interested parties could not have

52 Regulation inundation of water storage compensation De Dommel, 28 March 2012 (*Uitvoeringsregeling vergoeding inundatie bij waterberging*), Compensation of damage caused by water storage Aa and Maas, 14 February 2012 (*Vergoeding schade bij waterberging*), Policy Document Water storage and damage Brabantse Delta, 7 February 2012 (*Beleidsnota waterberging en schade*).
53 W.J. van Doorn-Hoekveld, 'Analyse van de schadevaststelling bij nadeelcompensatieverzoeken', *Bouwrecht* 2013, pp. 716-727.
54 *Kamerstukken II,* 2006/07, 30 838, no. 3, p. 133.
55 Council of State 22 May 2013, *AB* 2013, 249.

foreseen the extent and the exact place of measure, and when precisely it would be carried out. Relevant factors in this case where the fact that (a) the water board had announced the works in good time before actual operationalization, (b) the works were carried in the low season, and (c) the hotels were accessible during the works. Of equal importance was the fact that the damage of the private limited company was relatively small in comparison with its annual turnover (less than 1%). The most important statement regarding flood protection, however, is that *in general* one can state that flood protection measures fall within the normal social risk, which every inhabitant should take into account. The special burden was not assessed separately in this case, which is a general trend.

Two more remarks have to be made regarding the compensation regulation of the Water Act. Retention areas must be designated in the ledger[56] (Water Act) and also in a spatial zoning plan (Spatial Planning Act). This can lead to confusion about which document is the cause of the damage. Article 7.16 of the Water Act states that if a damaged party can claim his damage in accordance with Article 7.14 of the Water Act, the Spatial Planning Act is not applicable. Regarding a retention area, the designation in the ledger can be seen as the cause of damage and therefore Article 7.14 has to be applied rather than Article 6.2 of the Spatial Planning Act.[57]

The second remark pertains to Article 7.15, which states that damage caused by flooding and swamping (the actual damage as referred to in Section 5.2.3) will be compensated under the Water Act.

6.4.2. Spatial Planning Act

As stated several times in this Section, the RRR does not provide for any substantive norms for compensation but only for procedural provisions. It uses the substantive norms of the applicable regulations. One of these is the Spatial Planning Act. If a spatial instrument, like a spatial zoning plan, causes the damage, this damage is seen as planning blight. In 2008 the Spatial Planning Act was amended and in the compensation regulation, the 'normal social risk' was introduced. Although the regulation is not based entirely on the égalité principle, it is slowly developing towards a more similar regulation. However, the difference between the égalité principle as codified in the Water Act and the Spatial Planning Act is the absence of the special burden in the latter. The most remarkable difference is that the normal social risk has been objectified in two percentages: a threshold of at least 2% of the value of the property and 2% of the average annual income (Article 6.2) for so-called 'indirect planning blight'. In the Water Act, the normal social risk is not objectified at all. The percentage that is agreed on depends on all circumstances of the relevant case and on the water authority, because it has a large discretionary power to determine the normal social risk.

7. Recent flood risk management developments and compensation

After describing the main regulations of relevant compensation regimes and the main developments in flood risk management, it is now time to link the new developments to the compensation regimes. The most important shift that has occurred in recent years, is the shift from the more traditional measures (strengthening and reinforcing dikes) to mitigation measures (Room for the River, retention areas), although flood prevention through defence remains the most important layer of the multi-layered safety approach.

7.1. Flood defence measures: (new) Flood Protection Programme

As stated in Section 4.3.2, the most important layer of the multi-layered safety approach is prevention through defence. This is manifest in the (new) Flood Protection Programme, which plans to reinforce 731 kilometres of dikes and 238 flood defence structures, such as dams and sluices. When looking at the kind of damage, this project is likely to mostly cause loss of income and (less) devaluation of property. Considering the fact that the measures are taken in the field of water management, Article 7.14 of the

56 A ledger is a legal instrument that lists the conditions to which water management structures are subject. It includes a map showing the position of water management structures and adjoining protection zones (Art. 5.1 Water Act).

57 Council of State 25 April 2012, *AB* 2012, 178.

Water Act will be applicable. As the Council of State ruled before, it is likely that a large part of the damage will be considered as a normal social development, which every inhabitant should take into account when investing near a river or water body. As a consequence, less compensation will be granted because of reinforcement measures.

7.2. Mitigation: Room for the River

As mentioned in Section 6.2 the Room for the River project has its own regulation and its own well-demarcated territory. When it comes to measures taken within the territory of this project, not only the provisions of the Water Act, but also substantive provisions of the Spatial Planning Act are applied. This has consequences for the way in which normal social or business risk is assessed. The compensation is granted by the competent water authority (Minister of Infrastructure and the Environment). Especially the designation of retention areas may lead to devaluation of (agricultural) land and a loss of income (because of restrictions of use). If the retention area is part of the territory of the project, the Spatial Planning Act is applied. If the retention area is not part of this territory, the Water Act is applied. This means that when it concerns a retention area the outcome of the decision-making process of compensation claims may differ.

However, in event of the operationalization of a retention area, the starting point is full compensation of the actual damage to the property. In terms of allowing compensation, the outcome of the operationalization within or outside the scope of Room for the River will not be different, because in this case, the regulations of the water boards are relevant. The mitigation measures can have strong influence on the property of private parties and companies. Therefore it is less probable that a court will rule that this kind of damage is a normal social development. Hence, in contrast with the traditional measures, the damage that is caused by mitigation measures will be compensated to a larger extent.

7.3. Floods Directive

The implementation of the FD does not lead to specific measures taken to prevent flooding. However, the FD has the obligation to produce flood hazard and risk maps in order to inform the population living in the areas where floods are a serious risk. Flood risk management plans contain scenarios stipulating how the water and crisis managers have to handle cases of flooding. The hazard and risk maps and accompanying plans do not diminish the existing risks, but the areas become publically known as potential risk areas. This may lead to devaluation of property in the areas indicated on the maps, because a potential buyer knows the risks of flooding. However, this probably will not lead to compensation of this devaluation, because it is a matter of awareness and not an action of the state that causes the damage.

Nevertheless these maps and plans may influence the normal social risk addressed in future compensation claims regarding damage caused by concrete measures taken in flood-prone areas. However, from the moment that the risk maps and plans are made public, owners and potential owners have the opportunity to inform themselves about the risk of the property in question. Hence, both owners and potential owners should take into account that some necessary measures are to be expected, even though the timing and exact location of the measures are uncertain.[58]

7.4. The Delta Programme and multi-layered safety

At this moment it is uncertain whether the Delta Decisions of 2014[59] are sufficiently concrete to cause damage, as referred to in Article 7.14, or whether the actual damage-causing decisions are taken at a lower (decentralized) level – which is more likely. However, it is likely that the concrete damage-causing decisions and actions derived from the Programme are foreseeable from the time that the Programme was published. Because the Delta Programme is part of water management in general, Article 7.14 of the Water Act is applicable and damage will be assessed under the scope of this Article. Because the Programme itself is not likely to cause any damage and the concrete measures deriving from the

58 See the Explanatory Memorandum of Regulation V&W'99, *Government Gazette* (S*taatscourant)* 1999, 172.

59 The Delta Decisions include the main choices made in the Delta Programme and guide the measures that will be carried out in the coming years.

Programme are not known yet, it is difficult to predict the kind of damage these measures may cause. Part of the Delta Programme and the way the Minister of Infrastructure and the Environment wishes to proceed, is the strategy of multi-layered safety. The first layer, prevention through defence, is expressed in the (new) Flood Protection Programme. It is clear that any damage caused by measures taken as part of the first layer is (partly) compensated based on the provisions of the Water Act. The second layer, spatial planning, is more interesting. Any kind of spatial measures can be taken as part of this layer. Most of these measures are not water-related, in the sense that the Water Act is not applicable to these measures. One may consider prohibitions to build, building requirements, certain cadastral manuals etc. In these cases the compensation regulation of the Spatial Planning Act will most likely be applied; the competent authority will be the municipality that is responsible for spatial planning. Without a legal provision to harmonize the compensation procedure, this may lead to different outcomes of the decision-making process regarding compensation claims.

Finally the third layer, emergency management, may lead to all kinds of damage. Devaluation can occur when it is evident that property will be flooded, which may be the case when the flood risk maps and flood management plans show that the relevant areas will be flooded because they are not or less protected (see Section 7.3), although it is doubtful whether such a claim will be successful. Questions about the range of responsibility of the state for protecting the inhabitants are at stake in such a case. Emergency management can also cause a loss of income. During a crisis, roads can be blocked and property can be used as a 'secure haven'. This will cause loss of income. Together with the actual damage to property (which is flooded), the damage probably will not be compensated on the basis of the Water Act. When flooding occurs, the Netherlands has one compensation Act as back-up: the Disasters (Compensation) Act (*Wet tegemoetkoming schade bij rampen*).[60] This is a special Act, in the sense that in the event of a disaster it can be called into force by a Royal Decree to compensate damage caused by the disaster. Article 4 of the Disasters (Compensation) Act stipulates the damage that can be compensated based on the Act, e.g. loss of income and actual damage to property. It is not the Minister of Infrastructure and the Environment, but the Minister of Internal Affairs who is competent to compensate the damage on the basis of the Disasters (Compensation) Act. At this moment it is unclear how the Delta Programme and multi-layered safety will be carried out in concrete situations. Hence, it is difficult to estimate the compensation regimes which will be relevant. In any event, problems will occur because of the different compensation regimes which are applicable for the different layers.

8. Concluding remarks

Over the years flood risk management and compensation have been developed both analogously and separately in the Netherlands. Both areas reacted to natural and social events. Generally, disasters were the reason to effect changes, in both flood risk management legislation and compensation regimes. A good example is the North Sea Storm of 1953, which led to the first Delta Plan, followed by the Delta Act in 1957. As to compensation, the Disaster Relief Fund (*Rampenfonds*) compensated the damaged parties allowing them to restore their properties to pre-storm conditions. The flooding of 1993 and 1995 led to the Delta Major Rivers Act (*Deltawet grote rivieren*) and the mitigation approach of Room for the River. Concerning compensation, these floods led to the Disasters (Compensation) Act for the compensation of damage caused by disasters.

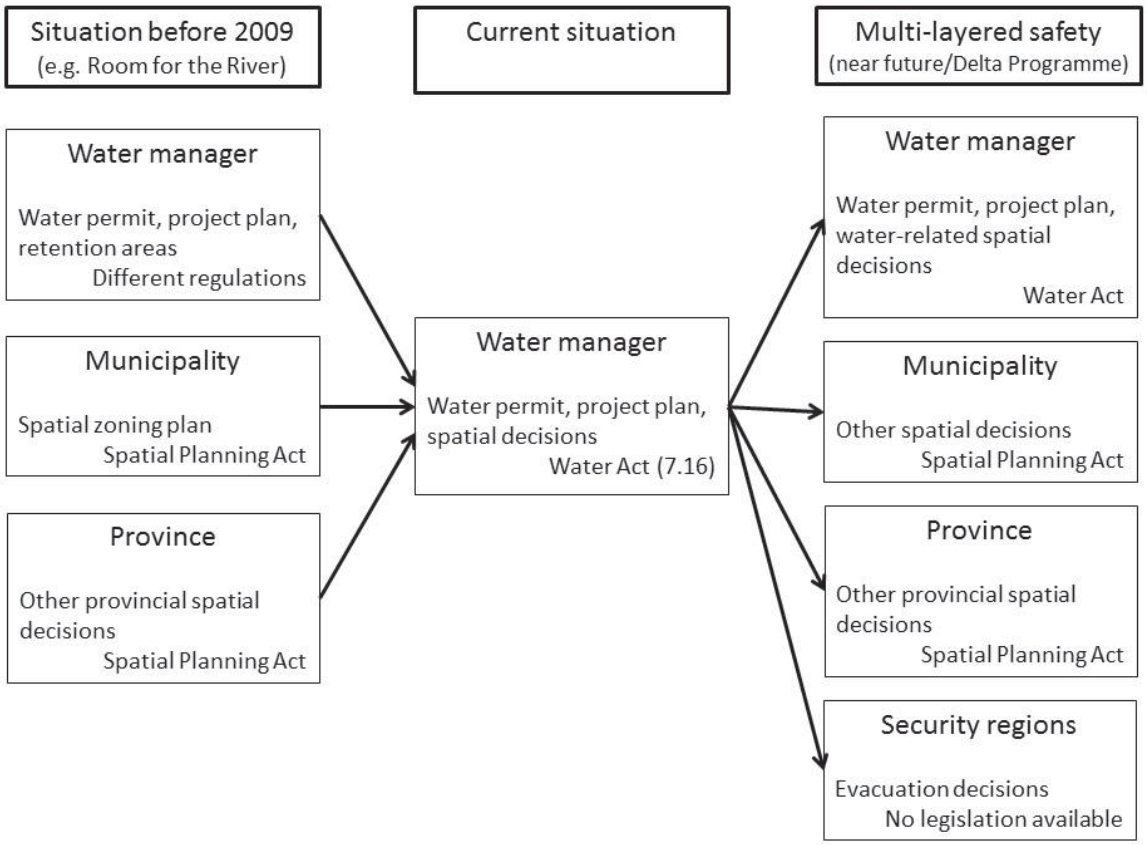
It should be noted that flood risk management is developing toward a more mitigated approach, although the traditional measures still form the core. The Delta Programme and the multi-layered safety approach are carrying out a system which takes into account all effects of flooding and the prevention thereof for society, in accordance with the trend to consider the water system as an integrated system instead of different separated areas. However, at the same time the new trend leads to segmentation of legal responsibilities, because the whole society must be involved. From a water management point of view this is a form of disintegration.

60 Most recently amended in: *Bulletin of Acts, Orders and Decrees* (*Staatsblad*) 2010, 252.

In the field of compensation law for lawful administrative acts, the tendency is to harmonize. In recent years various regulations have been merged into more general regulations and the compensation chapter in the GALA will complete the harmonization procedure of compensation for lawful acts. Although harmonization is desirable, the recent developments in water management have led to different results of compensation procedures, because of the fragmentation of competences resulting from the multi-layered safety approach.

Figure 6 illustrates the development of compensation regimes from the perspective of recent developments of flood risk management. In this figure, the public authority that is responsible for the compensation of damage is placed in the first column; the cause of damage in the second column; and the legislation on which the compensation is based is placed in the third column. In the current situation all responsibility lies with the water manager (water boards or Rijkswaterstaat). It is a perfect harmonization of flood risk management tasks and the compensation of damage caused by those tasks. With no special provisions, this harmonization will be undone by the multi-layered safety approach.

Figure 6 Shift of compensation regimes in view of developments in flood risk management



The Room for the River project created a solution for the problem of fragmentized competences, and Article 7.16 of the Water Act (which states that the Spatial Planning Act is not applicable if a spatial decision is taken in the field of water management) tries to do the same. However, spatial decisions taken in the multi-layered safety approach may not all be linked to a lawful exercise of a water management duty or competence to which Article 7.14 of the Water Act applies (e.g. the decision not to build in a certain area without any reservation for water retention): for some spatial decisions the compensation regime of the Water Act is applied, and for some the regime of the Spatial Planning Act is applied.

Another consequence of the multi-layered safety approach and the fact that flood risk and hazard maps are available to the general public might be the increase of the responsibilities of private parties. It more explicitly indicates the flood-prone areas and the consequences for private property. One might

expect that this knowledge will lead to enhanced awareness regarding the consequence of certain choices in a certain area (flood-proof investments regarding a building in a flood-prone area for example). I would applaud this possible increase of responsibility and awareness of the Dutch society. Although flood protection is a public task, one could at least expect cooperation with the water managers from Dutch citizens, who have been fighting the water for centuries.

History has shown that large developments of flood risk management were reactive in nature. A disaster was necessary to change flood risk policy and legislation together with the compensation regimes. The Delta Act and the multi-layered safety approach, which is currently developing, are proactive. Because no flood-related disasters have occurred in the last few years, the general sense of urgency is not very high.

Since this lack of urgency might lead to a lack of public support for the measures involved, compensation of damage might be more important in order to create legitimacy of the measures. It is therefore important that the compensation regime is clear.

However, the aforementioned segmentation of compensation regimes caused by the disintegration of responsibilities for tasks in the multi-layered safety approach might lead to an inconveniently arranged mass of different regimes, in which damaged parties will not know what the competent authority and the applicable procedure are for compensation of their loss. This means that the possible dispersion of responsibilities in the multi-layered safety approach does not fit into the more integrated compensation regime trend. I propose to establish a provision such as Article 7.16 of the Water Act to regulate the compensation of damage caused by measures taken as part of the multi-layered safety approach for flood protection, in order to make it clear for all parties involved which public authority is responsible for the compensation. This will to some extent prevent the risk that society will reject the measures that are necessary to keep the Netherlands protected against flooding, just because it lacks the necessary sense of urgency. ¶