3. Operationalising the Policy Arrangements Approach for Flood Risk Governance

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3.1 Introduction

To be able to analyse Flood Risk Governance, the Policy Arrangements Approach introduced in the previous chapter needs to be further operationalised. For this purpose, the four dimensions of the PAA, actors, discourses, rules and resources, can be disentangled and specific sub-dimensions can be studied in detail, both by policy analysts and legal scholars. Subsequently, however, the results of these detailed analyses need to be brought together to be able to make more general statements on the question whether, to what extent and how shifts have occurred in Flood Risk Governance in a particular National Flood Policies and Regulations domain and/or at the case study level.

The current chapter intends to provide guidance on how to do this analysis. For each analytical level distinguished in the previous chapter, this chapter lists specific items that can be analysed in detail. Section 3.2 provides guidance on how the context level can be taken into account. Section 3.3 focuses on the National Flood Policies and Regulations domain. Section 3.4 focuses on the case study level. Subsequently, in section 3.5, based on existing literature, some preliminary ideas on how to move from a reductionist towards a more holistic analysis of Flood Risk Governance Arrangements are provided. As the section argues, some further empirical work as well as confrontation of the empirical findings with the theory is needed to be able to say more on how FRGAs can be typified and how shifts therein can best be conceptualised. Finally, section 3.6 concludes this chapter and provides an outlook on the subsequent chapters.

3.2 Setting the context: characterising countries, cases and the nature of floods therein

As was explained in the previous chapter, at the context level a wide variety of issues can be discerned that are not part of the National Flood Policies and Regulations domain but do have an influence on it. These may include physical circumstances; historical events as far ranging as major floods, economic crises etc.; a country's administrative structure as well as its political and administrative culture; and the general legal context. It will be clear that it is undoable, within the limited time frame of the STAR-FLOOD project, to analyse all such items in great detail. Moreover, several of these items have been documented in literature already, so analysing them again would be reinventing the wheel.

It will be the responsibility of the young researchers in each STAR-FLOOD consortium country to determine which context-related issues are relevant and to what extent they should be studied to take them appropriately into account. The list below should be seen in this light. It aims to provide some ideas and guidance on this issue, but the list is not exhaustive. Neither is it compulsory to address all issues in the list. Some of them may be irrelevant in a specific country or case. A more detailed list of questions that can be potentially addressed at the context level is given in table A.3.1 and A.3.2 in the appendix.

The items that can be explored by the scholars at the context level are as follows:

- **Physical circumstances**: social scientific and legal studies should take into account the contextual elements linked to the physical circumstances such as meteorological events, rainfall patterns etc;
- **Culture**: the cultural context can be used as a basis to explain some trends in how water management is considered. Politico-administrative elements, specificities of Western countries, long-term diachronic evolutions or the historical context, state building process, etc. are all aspects of potential relevance for analysing Flood Risk Governance. Some aspects might be relevant for all STARFLOOD countries whereas some others might not. It is important to make relevant elements explicit by writing them down, so they can be discussed within the consortium;
- **Major socio-economic developments**: it is crucial to have a good understanding of the economic situation in each country. The current economic crisis and its outcomes, the shared will of the EU Member States to reduce their public expenses etc. are elements that are contextual and can be expected to directly influence Flood Risk Governance;
- **Risk perception/construction**: risk, as a socio-cultural construct, is not understood in the same way amongst the different actors' institutions. Risk perception and construction is subject to differences or similarities between the STARFLOOD countries;
- **Historical events**: these can pertain to the main events that occurred and that might have directly influenced Flood Risk Management in each country. Identifying those events as a contextual element can help in understanding their potential influence when the explanation of Flood Risk Governance (chapter 4) is taken up;
- **Legal system**: from a political point of view, the legal system can be analysed as a framework that occupies a specific place in dealing with floods. Legislation, case law, doctrine etc. are a way of producing knowledge but also rules and powers. The legal system has specific characteristics that answer to a political model. It can be responsive or preventive according to each country's political tradition. Legal scholars can undertake some more detailed analyses of specific topics at the context level:
    - *International legal context*: the international legal context is mostly made of juridical international agreements and treaties. They are more or less legally binding and might not have been ratified by all the STARFLOOD countries. Knowing this juridical international environment is essential to understand the legal context level. The level of integration and implementation of these international norms in the internal legal framework of each country has to be analysed too;
    - *European context*: most of the European context is made of treaties, agreements, directives that have a direct influence on the internal law of each country. Their transposition process should be considered, but legal scholars can also focus on the common European legislation shared (or not) by all consortium Member States. Moreover, European law is a mix of different national legal traditions and identifying the ones that are dominant can help to understand this context level;
    - *Characteristics of the legal system*: This item addresses the main characteristics of a national legal system. Most countries can be classified according to some basic juridical distinctions such as centralised/decentralised, Common law/written law etc. This legal background has to be explicated by legal scholars even though it might seem very obvious from a national point of view. It might not be obvious to other countries and making the effort to understand the legal frameworks in all consortium countries will facilitate conducting comparative law studies (see chapter 6);
    - *Main legal principles*: for each country, legal principles can be used as a basis for implementing new FRGAs and FRMSs. These principles are most likely to be seen as some general notions that underlie each country's legal tradition. Many of these notions are of wider relevance than flood-related policies only. It is also important to bear in

mind the legal status (constitutional, primary law, secondary law etc.) of these principles and how they might influence Flood Risk Governance;

- *Administrative structure*: this deals with the organisation of the state in general, of its administration at a federal/regional/local level. It also tackles the division of competences between different public authorities and between public and private actors;
- *Legal protection*: to what extent does legislation protect citizens against floods and how?
- *Liability*: this concept is very important as each country has its specific ways of dealing with responsibility. Liability regimes, that is the extent to which public or private actors can be held accountable for acting or not in the field of flood management, differ widely between countries. The liability regime in each STAR-FLOOD country can also be linked to historical and political elements. It will also influence directly the two following items: compensation and insurance policies;
- *Compensation*: the compensation regime includes the principles that are at stake, the financial basis taken into account for compensation etc. For each country the compensation is linked to some specific criteria;
- *Insurance*: the insurance regime also differs between countries. Policy analysts and legal scholars can describe insurance as a whole, its principles, its mandatory status, or not, its importance according to each country, amongst others;
- *Enforcement*: legal enforcement deals with the frequency and the amount of control of the juridical norms. Control of legally binding documents can be made at every level, ex post or ex ante.

As the list above suggests, policy analysts and legal scholars will have to work together to determine the relevance of each item and the extent to which it should be studied in detail to do justice to its relative importance. The list also shows that often a sharp distinction between the "public administrative" and "legal" aspects of an issue cannot be made in a straightforward way. For instance, the level of integration of a European treaty can be directly linked to political trends (unpopular treaty just before a major election). And vice-versa. Some political elements such as the cultural context can be linked to a specific legal background. The legal aspect can sometimes be understood as a response to political events but it can also be considered as an initiating force, mapping out a direction that may drives societal changes.

3.3Analysing the National Flood policies and Regulations domain (NFPR)

3.3.1 Introduction

To be able to analyse the National Flood Policies and Regulations domain, the four dimensions of the PAA as well as the sub-dimensions introduced in the previous chapter should be further operationalised. The following sub-sections are structured according to the four dimensions of the PAA: Actors, Resources, Rules and Discourses. As will be shown, in some cases policy analysts and legal scholars have complementary perspectives to offer on a dimension and in some cases their perspectives are overlapping. Table A.3.3, A.3.4 in the appendix provide a more detailed list of questions related to each item.

3.3.2 Actors and actors coalitions

Actors and their coalitions are the first of the four dimensions of the Policy Arrangement Approach. Table A.3.4 in the appendix provides a detailed list of questions to be addressed with regard to this actors dimension. They all come down to the main question of identifying the actors that have a stake in Flood Risk Management and try to figure out their position, role, status, and interactions patterns. A diachronic analysis over, say, 20 years, may bring to light that actors may have appeared

or disappeared, that the actors have changed or not and that their position has become stronger or weaker. Actors involved may be public or private actors, or both. It may be useful to inventory all actors involved and describe and identify the actors' environment. Any shifts, evolutions and movement in this environment will subsequently be explained and evaluated (see chapter 4 and 5). Most of the actors can be categorized according to some criteria such as how they are organised; their positioning in the domains of state, market or civil society; the expertise held by the actors or their particular interest in Flood Risk Governance. In the course of the empirical research, it will be tried to arrive at a similar categorisation of actors amongst the different STAR-FLOOD consortium countries, to enable the comparison in WP4. Types of actors to consider are the following:

- *Actors at the national level*: these concern actors that have played an important role over a long time at the national level, including ministries, national agencies etc;
- *Public actors involved*: these can be actors both at a national, regional and local level;
- *Experts and researchers*: all researchers and holders of relevant expertise regarding Flood Risk Management;
- *Market parties*: these concern actors involved in economic decision making such as private building companies, estate agencies etc.;
- *Representatives of civil society*, including associations, NGOs, users of a floodplain, riparian, citizens, and inhabitants.

3.3.2 Resources and power

Regarding the resources and power dimension, questions can be addressed regarding the types of resources actors have at their disposal, their distribution amongst actors and their impact on the content of decisions. Some resources might be used more often by certain type of actors. Not all resources are at the disposal of each actor and some resources can counteract or forbid the use of some others. Some resources can also be exchanged between actors through formal or informal agreements. The list below explores these issues for six main types of resources: formal competences, financial resources, knowledge, infrastructure resources, technical and interaction skills and political networks. A more detailed list of questions can be found in the appendix (Table A.3.5).

Resource-related issues to be addressed at the NFPR level:

- *Formal competences.* Rules may grant public authorities certain powers, for instance the power to regulate property or to impose levies and taxes (see the next bullet point). The findings resulting from preliminary analyses of public authorities and their formal competences in the STAR-FLOOD consortium have been published in deliverable report D1.1.4 (Hegger *et al*. 2013);
- *Financial resources.* Financial resources may include subsidies, the possibility to raise taxes, levies, the creation of funds, etc. Actors may have the power to provide other actors with financial resources or not (governments financing NGOs for instance) and they may have the ability to raise some funds independently. The power and resource based can be expected to be subject to developments at the context level. For instance, the influence of the economic crisis and the reduction of budgets for public authorities can likely be observed in all STAR-FLOOD consortium countries. Legal scholars also have something to say about financial resources. Budget law may help understand how Flood Risk Governance is financed and by whom. Budget law has its own regime and exceptions and this financial context has to be analysed to understand better how Flood Risk Governance is or can be financed. As far as taxes or levies are concerned, some national issues will have to be explained in some detail. This will help us understand financing of Flood Risk Governance at a more general level;
- *Knowledge resources.* Regarding knowledge resources, the question can be posed what the knowledge base of certain experts and knowledge organisations is. Which disciplines and fields of expertise are represented (hydrology, ecology, planning)? What are important knowledge programmes in Flood Risk Management? How is information shared amongst experts as well as

between experts and policymakers? What practices regarding the sharing of information, its payment and disclosure to the public can be identified? How do actors involved look upon the legitimacy of these practices?

- *Infrastructure resources.* Regarding infrastructures, the question can be posed who has the power to decide on building or destroying it or to use it? For instance, the decision whether or not to close the Maeslantkering, one of the main sea barriers protecting the Rijnmond Area in the West of The Netherlands, is decided upon by a computer algorithm;
- *Technical and interaction skills.* It is rather hard to identify technical skills in an objective way or to quantify them. Nevertheless they can be a very important resource in the relations to actors, as some skills can be transferred or not to others. Also having the ability to communicate with other actors or with decision-makers might play a very important role in implementing a FRGA;
- *Political networks*. For specific actors, it is important to determine their embedding and relative power both in formal and in informal political networks.

3.3.3 Formal and informal rules of the game

The notion of rules of the game, according to the literature, refers to the content of public policies (substantive rules), the procedural rules and to the rules of coordination between actors. In addition, the notion refers to both the formal rule (hard law - legal means) and the informal rules as part of an organisational or political culture. When analysing these formal and informal rules of the game, it may be necessary to incorporate relevant context factors in the analysis (e.g. consensus seeking style of policymaking in The Netherlands). Table A.3.3 and to table A.3.6 provide a detailed overview of issues that can be addressed regarding the rules dimension. The current sub-section restricts itself to the headlines:

- *Legislation*. Legislation at the level of the National Flood Policies and Regulations domain can be analysed by legal scholars. It is expected that in most STAR-FLOOD consortium countries legislation is produced and adopted at the NFPR level as the framework for flood risk maps, spatial planning, emergency management etc. is usually settled by a law. It is crucial for the legal scholars to investigate this legal landscape and give an objective and exhaustive portrait of it to other researchers. The accumulation of legal documents, also called “law sedimentation”, that occurs in most Western countries produces an abstruse juridical environment that we should first try to clarify. It is by making this inventory of all the legislations adopted in the field of Flood Risk Management that some general trends can be identified, analysed and explained. Having a clear view of legislation, legislative arrangements and how they have been made by the legislators (e.g. what was the spirit of the law, what was its first goal), should help in finding if the legislation has achieved its objectives, one of the tasks to be done in the step of evaluating Flood Risk Governance (chapter 5);
- *Substantive norms.* Substantive norms, which can be phrased either in a quantitative or in a qualitative way, should first be inventoried. It will be necessary to know where these norms come from, if they are shared by all relevant actors and stakeholders, if some of them have an international status, if they are used or not used anymore and why;
- *Legal instruments*. Legal instruments are the tools that actors have at their disposal to effectuate/enforce things. Also these legal instruments should be inventoried and it should be described how they work, for which actors they were made;
- *Procedural norms.* It is important to know which procedures are used to structure and embed the development and the implementation of a policy. Country-specific aspects need to be described in some detail to allow for cross-country comparison. Some procedures, such as public participation, competitive tendering etc, come from a European level, though, and might be similar in all STAR-FLOOD countries. It will also be interesting to analyse the extent to which these procedural requirements, stemming from European law, are applied throughout the countries in the consortium;

- *Integration or coordination of rules of different policy fields.* Integration and coordination deals with the relationships between different policies that are related to Flood Risk Management. Some of the STARF-LOOD consortium countries (e.g. France) might have separate legal fields and/or policies in the NFPR. This separation of the legal system can sometimes prove to raise difficulties in integrating different policy domains. Environmental law, urban planning law or construction law can all have impacts on Flood Risk Management. The presence or absence of links between these policy domains needs to be analysed;
- *Transnational cooperation.* Like integration and coordination, transnational cooperation is also about connecting legal systems in different countries. Norms, procedures, standards, instruments etc. are mostly country-specific. However, some specific cases of cooperation can be formalised by some legal documents. It is important to describe from a legal point of view if institutions, treaties, agreements or procedures exist to integrate policies through a transnational strategy.

3.3.4 Discourses (partly based on D1.1.2, Dieperink et al. 2013 and D1.1.1, Green et al. 2013)

Discourses can be defined as 'ensembles of ideas, concepts and categories though which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices' (Hajer and Versteeg 2005 p 175). A discourse provides the basic terms for analysis, debates, agreements and disagreements (Dryzek 1997) and enables subscribers to interpret bits of information and put them together into coherent stories or accounts. Discourses can generally be about three essential questions: what is real? (ontology; epistemic paradigms) , what is right? (normative ideas- utopia's laid down in policy programs) and what is possible? (strategies, possibility of governance and policy concepts). This is reflected in the discourse dimension in Table A.3.7 in the appendix.
Discourses structure communication. How an issue is framed in communication can be intended to influence how others interpret the issue. If one framing achieves hegemonic status then it is generally adopted and ceases to be a deliberate attempt to frame the issue in a particular way, simply becoming the way in which all frame the issue.

Issues within which different discourses may be distinguished
In WP1, report D1.1.2 and D1.1.4 (Dieperink *et al*. 2013; Hegger *et al*. 2013) eight issues have been identified within which different discourses on Flood Risk Governance may be distinguished. These topics are:

- The public private divide (the governance –discourse in general);
- The framing and communication of risks and uncertainties (varying risk approaches);
- The interpretation and translation of normative principles, including principles of who should pay (e.g. polluter pays);
- Standards of protection;
- The role of cost-benefit analysis in priority setting;
- Should FRM be based on more on engineering measures or more on natural processes; and the preferred FRM intervention strategy (varying epistemic communities).

It was concluded (Hegger *et al*. 2013) that these eight issues can be thought to be a promising entry point to start to analyse flood risk governance discourses. Furthermore, it was found that the topics differ in the extent to which they are actually debated vs. tacitly reproduced in Flood Risk Management practices. D1.1.4 has provided a first sketch of these debates and discourses, but they should be delved into more deeply in empirical research.

One can logically expect some discourses to be synergistic (e.g. the discourse on climate proofing cities) or antagonistic (e.g. the conflict between the principles of integration and subsidiarity). The importance of discourse as a way of framing the problem and as a polemic is most obviously

demonstrated by the title of the ministry having primary policy responsibility for FRM. That the name of that Ministry in England changed from the Ministry of Agriculture to the Department for the Environment, Food and Rural Affairs clearly illustrates this reframing. In doing so, responsibilities for water management which had been fragmented were also brought into a single Ministry. A related set of discourses concerns the different framing of floods, either as a free-standing problem (as in the Floods Directive), or as a water management problem (e.g. the IWRM framing) (Technical Support Unit, 2003), as one of several hazards, often specifically natural hazards (which might be argued to be the traditional French approach) or in terms of adaptation to climate change.

Different actor groups tap from and contribute to discourses. Sometimes discourses can be distinguished at the level of societies as a whole, but they can also be distinguished at the level of concrete policy domains and amongst citizens groups. Discourses can be used by coalition groups to be identified and distinguished from others. We can observe that effect with the use of a hyper-technical language, new or invented words.

Discourses are laid down in debates and controversies, but also in the content of programmes and proposed instruments in a policy domain. As far as discourse is concerned we can use linguistic discourse analysis that identifies the arguments of authority, new or invented words, political references, lexical fields, what is shown as "obvious", "certain" and also" conditional "," reversible "the use of a hyper-technical language".

Potential elements to include in a discourse analysis
When doing a discourse analysis, three specific issues can be taken into account:

- *Scientific paradigms*. Scientific paradigms relate to the background of the actors involved in a policy. It is expected to have an important role to play in the development and the implementation of the policy. Social sciences, law or natural sciences have their own discourses and their own set of values and perceptions. Identifying the ones that are dominant or frequent can help understand the positions of actors;
- *Policy programmes*. Programmes or objectives have an underlying discourse that needs to be analysed. For instance, the Netherlands policy called “room for the river”, works on some environmental concepts such as “renaturation” and spatial and ecological values;
- *Means for communicating*. The means of communication, the images, the metaphors or the analogies that are used in a discourse can help us understand what is at stake. Semantic analysis can help to provide a better view of what discourses are dominant or not.

When it comes to the development and implementation of policy programmes, a distinction between policy formulation and policy implementation is in order. At the level of policy formulation, a discourse analysis can identify the debates that are carried out within a FRGA. These debates are laid down in legislation, parliamentary reports, policy plans, evaluations of public policies, and budget discussions amongst others. These discussions should be linked to the actors carrying them and changes therein over time. A discourse analysis of policy formulation processes may include the following issues:

- The definition of the problem (and evolutions therein);
- Objectives (and their evolution);
- Instruments available (and their evolution);
- Organization of actors in charge of implementation (and its evolution);
- Procedure for formal coordination (and its evolution).

At the level of policy implementation, it is necessary to identify and analyse how local and regional level agenda setting takes place, how this has evolved over time, what instruments are available for

managing flood risks in the study area, and what types of controversies can be identified (if applicable). It is also important to identify the effect of the Floods Directive in this regard.

3.3.5 Conclusion

This section has shown that regarding each dimension of the PAA, a range of issues can be analysed in some detail. The four dimensions need to be combined to make more general statements on the number and type of FGRAs that can be discerned at the NFPR level. Section 3.5 will provide some guidance on how to do this. But before discussing this issue, it is necessary to explicate how the analysis at the case study level can enrich and refine the NFPR analysis.

3.4 Analysing cases

As mentioned before, the main object of analysis, explanation and evaluation within STAR-FLOOD is the National Flood Policies and Regulations domain. To fully capture how this domain "works" in practice, the empirical research will zoom in on the case study level. The case studies are urban agglomerations that can potentially be flooded by rivers. We expect these case studies to be exemplary for broader developments transcending this case level. Analyses at the case study level and at the NFPR level are expected to be complementary and to nourish each other.

Of course the researchers in all STAR-FLOOD consortium countries should assess how particular case studies relate to the NFPR level. For instance, are there any specific differences between both levels in terms of the nature and significance of flooding, the presence of legal exceptions or subsidies? Are the cases perhaps niches in which actors experiment with innovative Flood Risk Management Strategies, implying that they divert from the NFPR level rather than being exemplary for it? The latter is an empirical question.

In general, many of the questions addressed at the level of the NFPR are also applicable at the case study level. Only the way in which they have to be answered will differ. At the NFPR level in the Netherlands, for instance, we will find that the department of Public Works together with the regional Water Boards are important actors involved in flood protection. At case study level, we will of course not analyse Water Boards in general but specific Water Boards. Regarding spatial planning, the role of specific municipalities and specific local planning processes will be studied.

Both policy analysts and legal scholars will carry out empirical analyses at case study level. As will be shown in chapter 6, their analyses can to some extent be carried out separately, but at several points in time, they will have to be confronted with one another and integrated. Although, in principle, the object of research of policy analysts and legal scholars is similar, both disciplines will have specific emphases in their analyses.

Policy analysts may look in particular at:

- actors and actor coalitions related to specific projects and policy initiatives;
- specific resources and power divisions;
- roles of policy entrepreneurs at the regional level;
- specific examples of the implementation of policy instruments and of forms of public-private cooperation.

Legal scholars may look in particular at:

- local empowerment and legal control. The level of control and possible enforcement by public and private parties and the means given to enforcement, control ex-post or ex-ante can differ from a case study or a country to another. At the case study level, legal scholars can try to examine what the tools, procedures and instruments are that local authorities and parties have to control the application of certain norms or legal obligations. Moreover, bypassing some legal

arrangements or being on the verge of legality can also be a way to fulfill political needs at the case study level. On this matter, in the case of France, control of legality is an aspect that legal scholars should analyse at the case study level together with policy analysts;

- jurisprudence. This can appear to be more or less pertinent at the case study level as the judiciary is not organised in the same way in each STAR-FLOOD country. Some legal analysis might prove to be useful on this aspect at the case study level but can be hard to compare if the gap is too wide between each national judiciary. Table A3.8 in the appendix is organised according to each FRMS and provides more detailed and practical questions for analysing case studies from a legal perspective.

At this level of analysis, the level of detail in terms of the type of data to be collected will be relatively high especially for legal scholars. For instance, in The Netherlands a legal analysis at the case study level may entail a detailed analysis of local spatial zoning plans and the public consultations related to them. The relative amount of legal issues to be addressed at the case study level may, however, differ amongst the countries, since countries differ in the extent to which local and regional governmental actors have legislative powers.

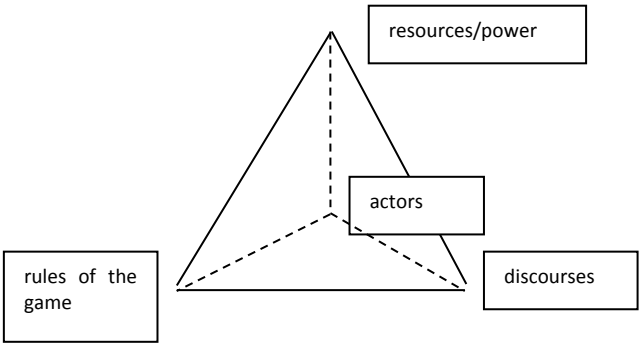
As chapter 6 will show, the case studies differ in terms of the Flood Risk Management Strategies that are applied, their degree of institutionalisation and the number and types of Flood Risk Governance Arrangements that enable or constrain the strategies. For each strategy that is identified in a case study area, its embedding in one or more Flood Risk Governance Arrangements will have to be determined. In so doing, it will become clear to what extent certain strategies are present, to what extent they have been integrated and combined (or alternatively: have developed autonomously) and what the relative weight of flood management policies is vis-a-vis other policies, especially territorial development policies and crisis management.

3.5 Towards a typology of stability and dynamics in Flood Risk Governance Arrangements

The previous sections aimed to provide guidance to researchers on the type of empirical data to be collected to be able to analyse stability and dynamics in Flood Risk Governance. In line with Liefferink (2006) we argue, however, that the four dimensions of the PAA do not just sum up to define a policy arrangement. The dimensions are inextricably interwoven. Liefferink has proposed the image of a tetrahedron to symbolise this interconnectedness (see figure 3.1).

As Liefferink (2006: 46) puts it: "The symbol of the tetrahedron visualises that any change in one of the dimensions may induce change in other dimensions. The appearance of new actors or a change in the composition of coalitions, for instance, may add new elements to the prevalent discourse or lead to another distribution of resources. Similarly, the introduction of extra resources (e.g. subsidies, knowledge, skills) or their withdrawal may attract new actors, exclude others or instigate new coalitions. A change in formal procedures, such as rules of participation or voting, may have similar effects. Finally, new ideas may enter the tetrahedron [FRGA in our research] through the dimension of discourse. Examples are concepts like ‘public-private partnership’ or ‘sustainable development’. If successful, such concepts may mobilise new types of expertise or legitimacy (i.e. resources) or form the nucleus of new coalitions. As a consequence of the indissoluble interrelatedness of the four dimensions, repercussions across dimensions are likely to occur – even though they do not necessarily have to do so in each and every case. Therefore, the analysis of a policy arrangement should in principle address the entire tetrahedron."

Figure 3.1: The tetrahedron, symbolising the interconnectedness of the four dimensions of a policy arrangement [Flood Risk Governance Arrangement in our case] (from Liefferink 2006, reprinted with permission from the author)



Flood Risk Governance Arrangements can in principle be analysed taking any of the four dimensions as a starting point. There is no a priori reason to assume that any starting point would be better than the others from an analytical point of view, as long as all dimensions are addressed. There may, however, be practical reasons to take a particular starting point. For instance, researchers may feel most comfortable with a particular dimension, or the data related to a particular dimension may be more readily available than for the other dimensions.

The researchers will have to consider the following types of questions to be able to make more general statements regarding stability and dynamics in Flood Risk Governance at the NFPR level:

1. Which *name* should we give to the Flood Risk Governance Arrangement?
2. *How many* different FRGAs are there, both at the NFPR level and at the case study level?
3. To what extent are these different FRGAs *connected*, to what extent are they *separate*?
4. *When* did each FRGA arise? (When) did it become connected to other FRGAs?
5. Finally, considering all FRGAs together, can we give a general characterisation of stability and dynamics in Flood Risk Governance at the NFPR level?

As these, granted, still general and abstract questions illustrate, one of the main challenges in empirical research will be not to drown in very detailed empirical data, but to use them as evidence for more general statements on content and organisation of Flood Risk Governance in the different STAR-FLOOD consortium countries. At this stage, before the start of the empirical analyses, it is still too early to predict what types of FRGAs will be distinguished. However, existing governance literature provides some guidance on how FRGAs could be typified (Arnouts *et al*. 2012; Driessen *et al*. 2012; Hysing 2009; Lange *et al*. 2013). Without discussing it in detail, some recurring points can be observed in recent literature proposing frameworks for categorising governance arrangements (Arnouts *et al*. 2012; Driessen *et al*. 2012; Hysing 2009). First, from this literature we can derive the point that governance arrangements could be placed on a continuum with on one extreme a strong government with a large degree of steering power and on the other extreme various forms of self-governance, whereby societal organisations, business but also individuals take issues up without government intervention. Second, the cited publications argue that in many cases different arrangements are seen to be present simultaneously. This may nuance the frequently-heard claim that an all-encompassing shift "from government to governance" would be taking place "everywhere". It will probably be better to expect forms of state-less governance to co-exist with more "traditional" forms of government intervention. Also hybrids between the two extremes of "centralised" (Driessen *et al*. 2012) or "hierarchical" (Arnouts *et al*. 2012) arrangements on the one hand and self-governance on the other hand may be found. These hybrids may be what in literature is termed "public-private governance" (Driessen *et al*. 2012) or forms of "open" or "closed" co-governance (Arnouts *et al*. 2012).

A tentative conclusion at this stage of the research project would be that at least the following two specific aspects of FRGAs need to be taken into account when trying to arrive at a typology of FRGAs: i) *The division of responsibilities between public and private actors*; whereby "responsibility" is understood in the broadest possible sense. Responsibility then refers to the extent to which actors from different societal domains (state, market, civil society) are involved in Flood Risk Governance, seen in combination with the resources they have at their disposal; the rules of the game they operate in and help constitute; and the discourses they tap from and give form; and ii) The extent to which different flood-relevant policy domains have been *integrated* in a single arrangement or, alternatively, operate relatively *autonomously*. In the course of the empirical research, it will be tried to arrive at a straightforward and universal denomination of different types of FRGAs.

3.6 Conclusion

This chapter has operationalised the analytical framework of STAR-FLOOD. It has shown how Flood Risk Governance can be assessed at the level of the context, the National Flood Policies and Regulations Domain and the case study level. It has, furthermore, operationalised the PAA, being the backbone of the analytical framework for the analyses at the NFPR and case study level. Policy analysts and legal scholars both have a role to play in the analysis at all three levels. After conducting the analysis, at several levels and for all four dimensions of the PAA (actors, discourses, rules, resources), the results should be tied together into a typology of Flood Risk Governance Arrangements and the dynamics (or absence thereof) in these arrangements. The latter exercise will get further flesh and blood in the course of the empirical research.

So, at the end of the "analytical" part of the empirical research, we will have identified types of Flood Risk Governance Arrangements, assessed if shifts therein have occurred or not and we will have identified some preliminary lessons regarding differences between national policy and legal systems. In other words, we will have an answer to the question: "what happened"? The assessment of Flood Risk Governance does not stop there, however. The ultimate goal of STAR-FLOOD is to identify design principles for appropriate and resilient Flood Risk Governance. To identify these, it will also be necessary to assess the questions of "Why did it happen?" and "To what effect?" Stability and dynamics in Flood Risk Governance should thus be explained (chapter 4) and evaluated (chapter 5).