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**FLOOD RISK MANAGEMENT
DIRECTIVE IMPACTS OVER
TRADITIONAL FLOOD RISK
MANAGEMENT
APPROACHES: THE CASE
STUDY OF LIGURIA**

of

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Abstract

In this manuscript it was raised the hypothesis that a (coercive) policy change could have a negative impact on traditional policy strategies. The following research is an investigation on potential impacts that the transposition and implementation of the Flood Risk Management Directive 2007/EC/60 could have had over the Italian Traditional Flood Risk Management strategies. The study constitutes an exploratory research and it is based on the case study of Liguria, an Italian region located in the Northern part of the peninsula. The exploitation of a conceptual model conceived with three fundamental components (policy divergence, policy success and degree of policy change) was employed as a mean to undertake investigation in the field. Empirical findings have shown two main different inputs that brought to a change of flood risk management policies; One of such could not be associated to the Flood Risk Management Directive and by consequence it could not be assessed as being of impact over the TFRM strategy. The study uncovered in relation to the case study a lack of monitoring from higher level of governance on the process of implementation and a recommendation for the European authorities on how to overcome such drawback was provided in Chapter 5.

Keywords: Flood risk governance evaluation, Policy success, Degree of policy change, Policy divergence, multi-level systems, Policy impacts.

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List of Abbreviations

FRM	Flood Risk Management
FRMD	Flood Risk Management Directive
TFRM	Traditional Flood Risk Management
D.Lgs	Decreto Legislativo (Legislative Decree)
PGRA	Piano Di Gestione Del Rischio Alluvioni (Flood Risk Management Plan)
PAI	Piano di Assetto Idrologico (Hydrological assets Plans)
UoM	Unit of Management
DE	Divergent elements

Chapter 1

1 Introduction: European Institutional instruments over local institutions

Climate change, according to the European Environment Agency (2012), is thoroughly affecting the entire European territory causing social, economic and environmental damages. The EEA expects the events caused by the climate change to increase exponentially in the future causing by consequence a significant increase of damages in the European regions. The European commission, according to its report in 2016 affirms that the key role on climate change has been played by the human factor. An over exploitation of lands and lack of awareness on what it is considered to be a harmful behaviour for the environment enhanced effects of climate change as flash floods, droughts and heat waves to grow significantly in the past years.

European commission further asserts that the EU strategies on the adaptation of Europe to climate change should have as a long-term goal an increased resilience through the development of an increased capacity of action across the member states. However, there are countries in Europe that deal floods problems since before the issuing of the Flood Risk Management Directive and they have been deploying different approaches to flood risk management.

This research builds knowledge in matter of potential impacts that the implementation of European Directives, namely the Flood Risk Management Directive 2007/60/EC could have had on traditional institutional backgrounds. The European Directive provides guidelines on four main themes, requiring Member States to comply with: (1) Providing evaluation of flood risks reports, (2) Drawing maps of risks, (3) Involve the civil society in the process of complying with the previous two points and (4) Drawing Flood management risk management plans.

These “assignments” challenge the Member States’ existing institutional settings under terms of restructuring traditional approaches in compliance to the European Commission’s rules. The research focuses on the degree of success of traditional policies on flood risk management approaches, on policy divergence and on degree of policy change, as a mean to evaluate the impact that the flood risk management directive has had on the Italian institutional setting.

The research question was posed with the intent of gaining insights on impacts that specific coercive policy transfer (as defined by Dolowitz and Marsh (1996)) that is the issuing of Flood Risk Management Directive 2007/60/EC, have had on recipient institutional settings;

“What is the impact of the Flood risk management Directive on the Italian traditional Flood management policies?”

The question is based partially on the hypothesis that floods events occurred far previously the issuing of such Directive and countries prone to these events have developed traditional ways of coping with the issue. The assessment of the efficiency of the Directive in terms of coping with Flood events should therefore be assessed in countries that developed a robust policy on the matter. Countries that experienced significant past damages due to flood events should constitute a priority for the European Union due to the worsening of climate change.

In order to assess the impact that the FRM Directive has had or could have on “experienced” domestic settings two sub-questions have been posed de-structuring the main research question; (1) How do I evaluate the change of traditional flood risk management approaches in relation to the transposition of the

Flood Risk Management Directive 2007/60/EC? (2) How do I evaluate the impacts that the transposition had on the Traditional flood risk management approach?

To provide a legitimate answer, this research employed theory mainly borrowed from policy sciences, institutional theory and political studies. A conceptual model is proposed in the following Chapter as attempt to introduce a theoretical proposition to be validated in the case study of the Italian region Liguria, Italy.

1.1 A case study

In this study it is sought to find answer to the research question posed above on the impact of FRMD on domestic institutional settings through the employment of a case study within the Italian territory. This choice occurred mainly because, according to European Commission reports (2016), Belgium, the Netherlands and Italy did not report information on historic floods as required from the FRMD because these governments decided to use existing flood risk assessments and flood risk maps. As the research question focus is on the impact of the FRMD on traditional institutional setting, the report of the European Commission confirmed the assumption that the Italian institutions have had a robust policy in flood management as Italian authorities preferred to use (although only partially) existing instruments rather than implementing those proposed by the European institutions. The case study as a research strategy is employed to investigate the implementation of the Flood Risk Management Directive in the Italian region of Liguria. The research focus is not on territorial basis but it is rather on institutional level (focus justified from the conceptual model proposed in the following Chapter). The region is located in the North-West part of the peninsula. It shares a border with the nearby France and counts four provinces. The choice of this region was made for threefold reasons: due to the increased frequency of flood events that are striking the territory (ISPRA 2016), the high accessibility of data and a presumed robust TRFM policy policies (Legge n.183/1989, Legge Regionale n.9/1993, Legge n.208/2004, D.lgs n. 152/2006). The area itself presents an heterogenous territory in terms of institutions reliable for flood risks, and an in-depth analysis of the area could provide a valid insight on the flood risk management directive 2007/60/EC impacts over local institutions. The Data in this case study is gathered with a semi-structured interviews and content analysis of relevant policy documents. The sources of the information sought are civil servants who operate within institutions reliable for flood risk management policies as they generally have the main influence over Flood Risk Management strategies.

1.2 Academic contribution

This study represents an attempt to provide a contribution to theory through presenting a conceptual model constructed through literature review and existing debates with regards to flood risk management governance, degree of change, policy success and policy divergence. The hypothesis around which this study was carried out starts with the assumption that domestic institutional settings have an institutional routines based on past experiences. The institutional balance reached on the meso-level (Rotmans et al, 2001) is being challenged by the introduction of European Directives, and the consequent hypothesis is that disturbing such balance could provide potential short or long term drawbacks for the traditional institutions that implements the Flood risk management Directive 2007/60/EC. When the conceptual model will result successful in identifying element of change relative to policy efficiency or policy “success”, the contribution to theory will be thorough. On the other hand, when the conceptual model proposed in the next chapter will result not sufficient to provide a comprehensive framework of analysis, it will provide a starting point

on which scholars may begin with. The approach employed in this research is therefore based on evaluating policy success in relation to policy divergence and degree of policy change throughout time. The academic contribution that this thesis provides is on granting a method for scholars to assess the impacts of the transposition of the FRMD over Member States local FRM strategies. Moreover, the conceptual model proposed in Chapter 2, takes into account the possibility of a policy change independent from the issuing of the Directive, so that, the analysis of the process of policy change can be thorough. Furthermore, the theoretical contribution that this thesis has is on strengthening the conceptualizations made by scholars brought up in Chapter 2 by the linking of such with empirical findings (to be found in Chapter 4). The research contributes in planning practice, by providing a method of analysis of the process of a specific policy change (transposition of FRMD) and, in planning theory, by accumulating knowledge in the field of policy change and more in general, on the field of policy science.

1.3 Societal contribution

The benefits that this research might potentially provide, when the framework of evaluation will be proved to be coherent to “ideal characteristics” that criteria of evaluation should have (complete, decomposable, non-redundant and operational) of Keneey and Raiffa (1976), will be of support to the policy implementation field. Assuming that the objective of basing strategies for flood risk management on the safety chain components as depicted by the FRMD provides a theoretical mean to reduce risks and consequences of floods throughout time, it may result to be not so in practice. The highest priority therefore should be given to the study of implementation of the FRMD in domestic institutional settings of Member States. The societal contribution of developing an approach for the evaluation of this type of policy change could be regarded as a mean to guarantee increased safety to the civil society of member states. Unexpected impacts over local flood risk management strategies could endanger European citizens and a valid mean to give a prompt answer to the potential issue is through investigating the process of transposition. Moreover, the process of monitoring over the transposition of the FRMD could be regarded as a mean to enhancing integration between European and Member States laws.

1.4 Research structure; an overview

The study is structured in 5 Chapters (including the introduction). While the current Chapter worked as a mean to introduce the focus of the investigation, the subsequent will provide a theoretical structure followed by the methodology deployed, empirical findings and the analysis of such. The theoretical framework (covered in Chapter 2) was created gradually, with an evolutionary definition of concepts borrowed from policy science that were subsequently linked in order to form the conceptual model proposed in Fig 2.

Chapter 3 instead covers what concerns the deployment of the conceptual model; the research strategy is therewith introduced, and a further argumentation regarding the model proposed, is provided on how this was employed on the field. In this section is provided a detailed explanation on how the framework of analysis was constructed in relation to the conceptual model with the intent of delivering naturalistic validation to the methodology. Chapter 4 provides a detailed report of Data collected in a structured manner. It is relevant to mention that the process of reporting the most relevant information excluded parts of the interviews, therefore in order to allow the reader to have a full access of the transcripts, appendices were added in the final pages of the manuscript. The transcripts were left in the original language to avoid mistranslations that could influence the richness of Data. Subsequently the final part of

this Chapter is dedicated to comparing empirical findings to the theoretical discourse constructed in Chapter 2 and synthesize the process of coding information.

The final Chapter (5) discusses the empirical findings and give them meaning through a personal interpretation of the data. Moreover, in this section, it is provided a brief recommendation for the European authorities to overcome what it was interpreted to be a potential issue followed by a critical reflection on the process of investigation.

Chapter 2

2 Theoretical framework

The research develops on the fields of policy science and institutional theory and it made use of theoretical concepts from various scientific domains in the attempt to create an useful framework able to assess the effectiveness of policy design in practice. The research question was posed as below to shed light on the gap between planning practice and theory on such matter.

“ What is the impact of the Flood risk management Directive on the Italian traditional Flood management policies?”

The following sections highlight the main concepts employed for the problem definition under a theoretical point of view. The implementation of the European Directive is perceived as a coercive policy change (Dolowitz and Marsh, 1996) that impacts traditional planning systems. In this section, the differences in matters of policy change are introduced as a mean to justify the selection of the Italian case study. As mentioned previously, this thesis focuses on building knowledge on the gap between planning practice and theory. Such divide is widely discussed by scholars within the academic community, first among them Innes (1983) who points out on how theory does not find common ground with experience.

2.1 Multi-layered system and Degree of Policy Change

To develop a structured theoretical framework it is a priority to define what policy and policy change are. What is it policy? Policy can be defined as a course of actions adopted by a formal organization undertaken to achieve a determined outcome. The research is partially based on the science that studies policies which takes the name of “policy science” and according to James F. Reynolds and Milton Marney (1975), it can be defined as *a form of inquiry which seeks to produce empirical knowledge, in respect to a policy problem [...]*. Policy change instead, is a phenomenon largely studied by the academic community and the “behavioural” change of such, is opened to various interpretations. This research builds partly on two main conceptualizations of policy change, the conceptualization developed by Charles Lindblom’s in 1959 on incrementalism and the other developed by Peter Hall’s 1989 study of policy paradigms. The two definitions of policy change are based on the assumptions that the two types of policy change follow different evolutionary patterns of policy; the incremental change and radical change. It can be argued that those definitions of change are not up to date, however according to Sartori (1991) a problem common into the academic research is the conceptual stretching which, paraphrasing the author words, is an unnatural extension of definitions related to a defined concept. So that it was employed in this research the concept of Incremental and structural change which represents a primordial differentiation between types of policy change. Although the conceptualization of policy change may have further evolved through time, Lindblom’s (1959) conceptualization of such provide a simple and yet complete conceptualization of change that would prevent potential conceptual stretching (Sartori 1991). To find answer to the research question it becomes therefore relevant to classify the process of change, or in Howlett & Cashore (2009) words, identifying the number of moves away from the status quo whether these changes are cumulative or they represent a fluctuation consistent with an existing policy equilibrium.

It can be argued that the differences between the two modality of change become blurred when the variable of time is taken into account. The concept of path dependency introduces a mean to differentiate radical from incremental change. It is relevant to understand whether the policy change is incremental

rather than radical to this research because the conceptual model proposed is conceived to work with incremental change. Such change it is assumed to have lesser impacts over traditional institutional setting in respect to a radical policy change. It was further assumed in this research that strategies for overcoming negative impacts subsequently to incremental policy change would be more realistically made in comparison to impacts over an institutional setting changed radically. In order to distinguish between the two type of change, the concept of path dependency was employed in this research.

The concept of path dependency lies its origins in social and sciences and economics and it is still matter of debate on who should get credit for its use. It is based on the idea of analysing what Booth (2011) calls specific “historical sequences” that set into motion fundamental institutional changing patterns. Gains et al (2005) point out *“there is a lack of clarity in the concept of path dependency about how wide is the path or what is that makes a policy the same and what would mark a radical break”*. It can be argued that choosing a specific timeframe determines automatically the feature of change of a determined policy as the wider is the temporal gap investigated the more substantial is the entity of change.

The FRM Directive is understood in this research as being a type of incremental change. European Directives are proposed by representative of Member States and as such it is assumed that they are proposed in such way that they partially overlap with Member States institutional systems. It is further argued that the FRMD did not represent a radical change. The FRMD 2007 is a move forward from the previous (and first) Directive in water management policies; the Water Framework Directive 2000/60/EC. The FRMD laid its basis on the structural framework dictated by the previous WFD Directive and it is therefore argued that it can be considered as being part of the same process of policy change. This in turn signifies that the contemporary institutional setting should present narrower gap as regard water policies that it might have in respect to a radical change.

To understand the policy change and the related obstacles to it, becomes advantageous for this research to locate the policy change into a specific timeframe. It is logical to presume that the wider the timeframe is, the more likely a policy change might appear as a radical change. This assumption led to undertake research on confined to the issuing of the FRMD 2007 rather than on the WFRD 2000 due to the content of the first. The FRMD, although it lays its basis on the WFD 2000, is the first European Directive to address directly Floods issues. So that, the analysis of institutional changes on managing floods could provide more relevant results and suitable data that can be used to provide recommendation to be exploited in contemporary contexts.

Furthermore, policy change and institutional resistance have been related in this study to what in physics would be called “friction force”. This “force” is also known “Institutional Inertia”(Harries, 2011), a phenomenon that sees institution reticent to change to a new paradigm. The institutional inertia is constituted by various factors interrelated with each other that perpetuate the status quo or equilibrium of an institutional setting. This study relates the “institutional inertia” to the reticence of institutions that shape FRM policies to exogenous normative inputs (European Directives). Such reticence is further theoretically linked to Rotmans et al (2001)’ conceptualization on multi-layered system, later in the following section.

To explain the concept of such institutional opposition to change it becomes relevant to briefly introduce the concept of institutions itself. North’s 1990 work on institutional theory provides a thorough definition of institutions and conceives them as being the rules of the game in society. Therefore, according to North (1990) they can be defined as entities that structure incentives in human social, political and/or economic exchange. Under an academic point of view they are accordingly most commonly defined as humanly made constraints that mould human interaction. North (1990) further divides them in two distinct categories; formal (rules and laws) and informal (customs) institutions. In addition he elaborates his theory on their

interaction; “ [...] *formal institutions are a crystallization of informal institutions and they co-evolves through the agency of organizations [...]*”.

This thesis, as mentioned earlier, has a focus on the institutional domain as a mean to evaluate the impact of FRMD on traditional institutional settings. This choice occurred because it was assumed that when the impacts of the transposition of the FRMD where assessed over institutions, a strategy to counteract potential issues could be provided exploiting theoretical frameworks that relate to policy change (e.g. institutional design).

Policy change and institutional resistance are conceived in this thesis as two elements of the same equation. The first would be logical to assume that should be dependent to the latter. It becomes therefore relevant to further understand where in the institutional setting the resistances are. Rotmans et al. (2001)' conceptualization on multi-level systems was employed in this research as a mean to locate where these forces are to be found.

The choice of employing Rotmans et al. (2001)' conceptualization came useful as a mean to narrow the locus of investigation on institutional settings. Such theory conceives a divide between different level of a system and distinguishes from different types of dynamism of change. While according to Rotmans et al (2001)'work Macro e Micro level are the extremes of a system that influence the Meso level through low dynamism change, the Meso level has a higher level of dynamism in respect to the other two levels. Such conceptualization was exploited as a mean to define the locus of investigation of the research. As previously indicated, the focus of this study remains on individuating the impacts that a policy transfer from EU have over local institutional settings. The process of framing where such impacts are to be seen in theory represented the first step to the construction of the theoretical framework.

According to Rotmans et al (2001)' conceptualization of multi-level systems, the three levels that can be distinguished are: the micro level, which comprises individuals, the meso level, which comprises organizations and networks, and the macro level that comprises agglomerations of institutions and organizations.

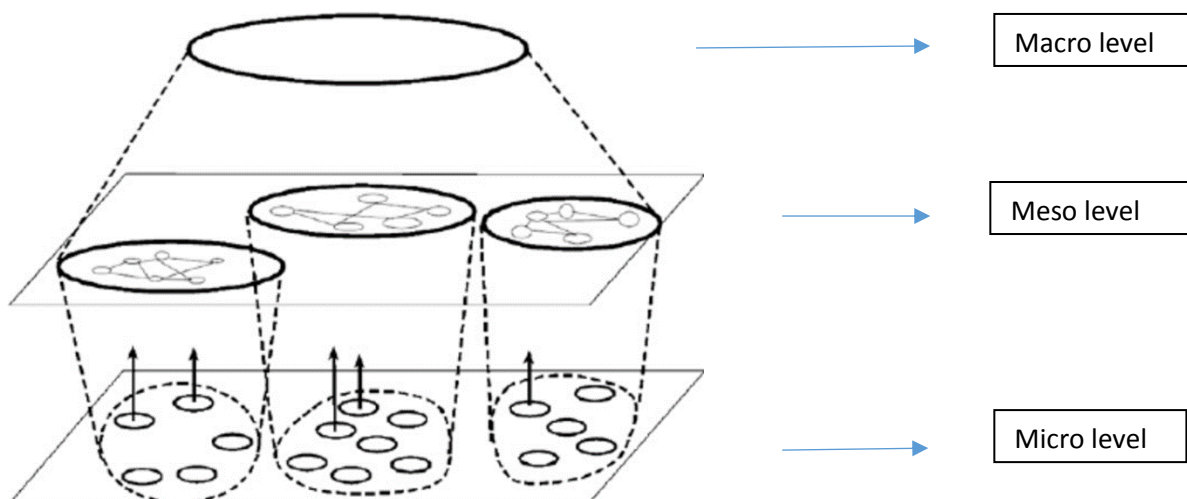


Fig 1. Conceptualization of influences on institutional level developed by Rotmans et al, (2001) on multi-layered system.

It is further logical to assume that the application of Rotmans et al (2001)' conceptualization is dependent on the discretion of the scholar that employs it in its research. This study makes use of such conceptualization to structure where institutional resistances can be found and to support the development of a suitable research strategy.

In the research it was exploited Geels (2002)' point of view on what constitute the three separate levels. According to his work in, these layers are linked and, although each one has different dynamism, they coevolve. In his work on *Technological transitions as evolutionary reconfiguration processes* (2002) he associates landscapes changes as being cultural, broad political changes and other similar trends. This study takes sparks from his work and understands the macro level as being the cultural, societal and political change that challenges the TFRM. This statement is supported by Meijerink and Dicke paper (2008) where they highlight how traditionally, water managers have approached the issue of floods with structural measures (engineering works) while nowadays, the awareness in increasing flood risks shifted towards the employment of non-structural approaches. The "awareness of increasing flood risks" was understood in this research as cultural change that influence in turn the meso-level, or regime.

The so called by Geels (2002) "patchworks of regime" and by Rotmans et al. (2001) "networks" might be understood as being conglomerate of institutions that constitute the meso-level. However, the concept of institutions or conglomerate of such, could be fuzzy to identify in doing research (North, 1990). The concept of meso-level at this point becomes subjected to issue of relativity due to various interpretations that can be given of scholars on institutions within the meso-level; what constitutes a network and what it does not can be matter of debate. In order to give enhanced clarity to this study therefore it was decided to pinpoint the meso-level as being governmental institutions as these are recognized to be an existing and formal network (within the European Union) world-wide. According to such argumentation it can be at last described what composes the micro level. Geels (2002) describes this level as niches or cumulation of niches in which actors operate. According to such definition, niches can be therefore located mainly outside the composition of formal institutions that constitute the regimes. Moreover, the fundamental feature of niches according to Geels (2002), is the innovative capabilities that influences the regime due to its benefits. It can be therefore acknowledged that although the micro-level has influence over institutions, it can be located outside the network of institutions and consequently excluded from a direct investigation.

Given that the conceptual model conceived in this study makes use of the conceptualization of multi-level systems enriched with other theoretical propositions discussed later in this Chapter, it becomes relevant to mention Searle (2005)'s view on institutions as a mean to further narrow the focus of the investigation. In his work (2005) it is made clear that almost everything relevant to organizations and markets can be subsumed under the concept of institutions. In order to reduce the abstract character of such and to define institutional resistance, this research builds accordingly to Searle (2005) on the innovation theorists point of view of institutions. This school of thought conceives institutions as being a rather concrete elements; they are organizations that deal with the utilization of research and development (universities, institutes and such). Searle (2005) provides therefore a definition of institutions that is exploited in the investigation as a mean to locate the most appropriate Unit of Analysis (Yin, 2003).

The conceptual model (figure 2) was designed under the idea that it could be employed as a tool to assess FRMD impacts over TFRM strategies by all European Member States. A variety of conceptualizations of multi-level systems and institutions were employed to identify the cogwheels that constitute the institutional system. It becomes therefore relevant to add that the meso-level as it is conceived in this study, refers to layers of governance that lays immediately below the supranational and National level. The choice of focusing on authorities lower than Nationals levels was made in order to allow Member States to deploy the framework of research on their jurisdiction as a mean to evaluate the efficiency of lower level of governance in the process of transposition of the FRMD. Such framing to lower layer of governance relates to the conceptual model itself and its potential contribution under the societal point of view (Section 1.3).

As mentioned earlier, the employment of Rotmans et al. (2001)' conceptualization is a composing part of the conceptual model and as such it requires further elaboration. The Rotmans et el (2001) conceptualization of multi-level system is based on the assumption that the three levels conditionate each other with different degree of influence. Given that the conceptual model investigates over the changes

that occur on the meso-level it becomes relevant to understand how the micro and macro levels could influence such change. In this research the influences of both macro and micro level were conceived as being a single type of influence as there was not the need to distinguish one from another. This point of view over system's influences do not aim to criticize nor debunk prior theories and conceptualizations over multi-level system. It is argued however, that there is an advantage in considering them as one rather than separate in this investigation. When the degree of policy change is assessed in relation to time it allows to describe policy change (in)dependently from the transposition of Directives (changes in the meso level triggered by macro or meso or micro level of the system). The conceptual model was devised as a mean to understand when the meso level has changed due to influences within itself (endogenous inputs), consequently the exogenous influences over it (from Macro or Micro levels) can be grouped under the same feature.

The investigation of change in FRM strategies in relation to a certain place in time therefore represents the starting point on the process of assessing impacts that the coercive policy transfer (Dolowitz & Marsh, 1996) might have had over the institutional system. By measuring the degree of policy change, one could gather information over the changing policy strategy that could be dependent or not from the issuing of a formal policy change. However these information alone have no value in measuring impacts of the transposition of European Directives as they describe all types of influences that had effect on traditional policies in time. The element "Degree of change" has to be embedded therefore in a wider conceptual model that evaluates the effects that a policy change in relation to the issuing of a "new" policy (FRMD) over a TFRM approach. By merging the two types of information it should be possible to recognize therefore whether an element of change is due to the issuing of a new policy or to external influences.

As mentioned earlier in the previous section, according to Meijerink and Dicke (2008), transitions in policies based on flood probability towards policies based on risk has occurred (or is ongoing) worldwide. Such change was the reason by which the measuring of degree of policy change was included in the theoretical framework. In their study they highlighted how traditionally, water managers have approached the issue of floods with structural measures (engineering works) while nowadays, the awareness in increasing flood risks turned to integrate the traditional approaches with non-structural approaches (policy change).

The composing elements of the conceptual model presented in Figure 2 are three: The degree of policy change, which was discussed in the previous section, the degree of policy divergence, and the change in time of policy success. The following sections provide a theoretical overview of the policy change investigated in this study and they will introduce the two so far neglected composing parts of the conceptual model.

2.2 European Policy Change

The concept of FRM is described by the academic community as highly context dependent (Beven & Hall 2014), therefore at this point of the research, it becomes useful to elaborate how FRM is conceived by the European Union. According to Beven & Hall (2014) flood risk can be evaluated as being the product of “hazard” (flood probability), exposure of population, capital and the vulnerability to the territory to floods. This definition of flood risk is similarly employed by the European Commission as the documents released on the matter of FRM equally state. The Commission of European Communities (2004) aims to reduce the likelihood of the impact of floods through incorporating the “safety chain” elements in the drawing process of FRM strategies of the Member States.

According to Brink et al (2008) the concept of safety chain originated in USA from the Federal Emergency Management Agency which developed this approach in order to address thoroughly concerns of safety and security through the exploitation of key concepts as mitigation, preparedness, response and recovery. In the European context these elements are embedded in the FRMD; it requires the Member States to base their strategy accordingly to the safety chain components (The Commission of European Communities, 2004) that are:

- a. **Prevention:** by identifying flood prone areas and avoid further development; by adapting development plans to the risk of flooding; by promoting appropriate land-use
- b. **Protection:** by taking non-structural and structural measures in order to reduce the likelihood and impacts of floods.
- c. **Preparedness:** by raising social awareness in terms of flood risks and what to do in case of flood
- d. **Emergency response:** developing emergency response plans in the case of a flood
- e. **Recovery and lesson learnt:** Turning back to normality as fast as possible and reducing economic and social impacts.

This change in policy regarding FRM dictated from the European Union had to be embedded in a context where there was already a TFRM existing strategy. The European Union therefore developed a variety of institutional instruments that carry different weight of coerciveness that are used to implement coercive policy changes.

Regulations	This is a legal act that can be directly applied. it is mandatory for all the Member States although it is not compulsory for the receiver State to embed it to the National legal framework. It may be necessary to edit the current national law in order to avoid inner conflicts within the legal setting.
Directives	It is a legal act that obliges Member States or a group of Member States to pursue determined objectives. Often in order to have validity, the directive has to be embedded in the national legislation. The main aim of directives is that an overall objective, stated in the legal act itself, has to be achieved within a certain period of time. However this institutional instrument leaves to the Member States the choice of creating their own means to achieve the policy goal.
Decisions	It can be addressed to all the member states or at group of people. This is mandatory in all its

	aspects. For instance, the decisions are used in order to regulate proposals of merging processes between companies.
Recommendations and Opinions	These are not mandatory to follow although strongly suggested.

Table 1. EU institutional instruments

2.3 Policy Divergence & DE

In order to understand why other European Member States struggle to implement many Directives, as the Directive transposition deficit suggests (EuroStat, 2017), it becomes relevant to make reference to academic literature review in relation to such policy change. Kortelainen et al. (2016) describe Directives under a governance point of view. They argue that an EU Directive have three overlapping proprieties in relation to governance; hard governance, soft governance an empty governance space. The first characteristic refers mainly to the basic standards and ideas of the European Committee. The “hard” policy elements are a result of negotiation between EU and the Member States. The Soft elements (recommendations and guidelines) give instructions on the desired policy goals and consist of implicit or explicit statements for the support of achieving the correct transposition. The last component is the empty governance space, they argue that a directive maintains in part a void regarding detailed political practices in order to be filled by local policy makers when implemented.

The FRM 2007/EC/60 enters traditional settings that have often their own mean to deal with the issue of floods and as such they are already balanced within domestic broader policy networks. It can be inferred therefore that there is a certain degree of divergence between the hard elements (Kortelainen et al, 2016) of FRMD and the TFRM policies. This research partly builds on such “contrast” referring to it from this point onwards as “divergent elements” or DE. Such factor, is a composing element of the conceptual model presented in Figure 2.

To further understand what the DE are, this research exploits Carter et al. (2015)’s method for assessing policy divergence. According to their work on “*Assessing Policy Divergence*”, among the factors that affect policy success is policy design. In Carter et al. (2015)’s work they introduce a method to code the content of policies as a tool able to identify their strengths and/or weaknesses.

The research made use of part of the Carter et al. (2015)’s design attributes; These are listed as follows:

Clarity consistency and closeness of the outputs and outcomes	The attribute aims to assess the desired policy results and whether its aims are prioritized and consistent with the process of obtaining policy goals. They assess such attribute with the question: “ <i>To what extent are the law and regulation consistent in outputs and outcomes?</i> ”
Hierarchical integration within and among implementing organizations	The attribute assesses the hierarchical integration. Government agency influences the generation of policy outputs. This category includes formal obstacles or pushes that can be raised within the process of policy adaptation as for instance Veto points or incentives. They describe Veto points as situations in which actors reliable for implementations fails to comply with activities that would be necessary to achieve the desired policy outputs. On the other hand, they describe

	incentives as being sanctions that can be used as coercive factor for compliance with the policy. They assess this category with three distinct questions. <i>“Do implementing agencies have the authority to achieve the outputs?”</i> , <i>“Are there adequate sanctions to ensure compliance?”</i> , <i>“Are there adequate directives for monitoring and enforcement?”</i>
Decision rules by implementing agencies	They describe this category as having two forms. The first in which the criteria to make decisions is established and a second that stands for the decision making process criteria (ex. Majority vote). They assess this attribute with two questions: <i>“To what extent are the evidences needed to make decisions sympathetic to the objectives of the policy design?”</i> , <i>“To what extent are the decision making rules likely to support the objectives of the policy design, given the context and policy outputs and desired outcomes?”</i> .
Formal access by outsiders	This attribute refers to the accessibility by outsiders to formal contribution to the policy implementation process (ex. Assigning decision rule to elected official). They assess this attribute through asking the question: <i>“To what extent does the policy design offer formal access to political supporters outside of the implementation agency?”</i>
Adaptability of the policy	According to Carter et al.(2015) the ultimate aim for policy makers is to make a policy that allows for its own adaptation by the administrative organization in order to better achieve its goals. They assess this category with the question: <i>“To what extent does the policy design enable adaptation by the implementing agencies for achieving the policy outcome(s)?”</i> .

Tab 2. Revised elements of evaluation of policy divergence based on Carter et al (2015)’ method to assess policy divergence but stripped by the elements: Adequate causal theory, Consistency of government agency mission with policy objective and outcomes and Adequate allocation of financial resources due to their redundancy when combined with Alexander et al (2016)’ framework for FRM governance evaluation.

Carter et al. (2015) method to assess policy divergence is therefore used as a mean to analyse the contrast between the FRM 2007/60/EC in comparison to the TFRM strategy. As previously mentioned, the identification of DE is a fundamental part of the conceptual model presented in Figure 2 which aims to answer the research question posed initially; “what is the impact of the flood risk management directive on the Italian traditional flood management policies?”. The immediate following section describes the last component the conceptual model which will be introduced in section 2.5.

2.4 Policy (un)success

As briefly introduced in the previous section, this investigation aims to gather information over the impacts that the entering of a renewed policy may have on traditional institutional settings. In order to comply with this objective it was employed an interpretation of impacts based on degree of success or un-success of policies. By confining the measuring of impacts that a policy has on institutions and civil society there could be delivered an enhanced employability of the information gathered from this investigation for scholars who desires to exploit them (as it will be explained later in this section). It becomes of relevance therefore to give broader definition of policy (un)success based on literature review.

Policy success according to the academic community is context dependent as its evaluation strictly depends on the framework of criteria employed to define “success”. According to Solik & Penning-Roswell (2016) the factors of policy success are tied to the implementation stage. In their view policy success should be

seen as successful only in its implementation rather than in its initiation. They also state in their work (2016) that the implementation stage is faced mainly on a local level and that local institutions are facing by default issues on day to day basis. They further elaborate that local institutions struggle to balance the implementation of new policies into the local thick institutional background, justifying therefore the hypothesis raised in this thesis on potential drawbacks on TFRM due to the transposition of the FRMD. Such statement also emphasizes the necessity to investigate on institutional layers lower than National authorities as according to Solik & Penning-Roswell (2016) they are more impacted by policy change.

Furthermore Howlett et al (2009), assert that bureaucrats are the most significant actors in the process of policy implementation and the availability and fair access to resources plays a pivotal role in relation to a successful implementation. According to Solik & Penning-Roswell (2016) the incapability of agents “of implementation” to undertake required actions, contribute greatly to any implementation deficit. Paraphrasing William (2008) words, policy implementation deficit is to be related to policy makers that are often designing policies even though not familiar with context embedded issues. She further asserts that there is often a gap that should be taken into consideration between higher and lower level of bureaucracy and that a fair match should be existing between policy change and issues that require policy change. Literature review on policy success and policy impacts therefore suggests that the main source of information regarding this research should rely mainly (although not alone) on sources as civil servants due to their pivotal role in the process of policy change.

It was further assumed in this research that the main factors that deal with policy success are to be related to the policy implementation stage which in turn depends on resources and local institutional contexts. Alexander et al. (2016) ‘work was partially employed for the development of the research. Alexander et al. (2016)’ operational method to evaluate flood risk governance was employed as a method to assess policy success of TFRM strategy. Through the evaluation of the evolution of degree of policy success throughout time it is possible to complement the information that the remaining two components of the conceptual model provide.

In Alexander et al. (2016) work on “*A framework for evaluating flood governance*” they propose to evaluate policies by assessing the flood risk governance support for **societal resilience, efficiency and legitimization**. However, the Alexander et al. (2016)’ framework dedicated to assess legitimization was not employed in this research for twofold reasons; Firstly, the evaluation of the legitimization is entirely dependent on civil servants perceptions so that, opinions could be ever changing; in this case the information collected with such framework would be of no use for this investigation. Secondly it was assumed that being part of the European Union for a member state implies that governance on that level retains legitimacy. It was further assumed that until the Member State investigated stays within the European Union the EU authority has legitimacy so as its Directives. The tables below provide a schematized picture of Alexander et el (2016)’s evaluation framework taken from their work “a framework for evaluation flood risk governance”(2016).

Regarding policy efficiency:

Evaluation criteria	Benchmarks for efficient flood risk governance	Dominant Locus of evaluation
Resource efficiency	The flood risk governance arrangement or sub-entities of governance use resources in an efficient manner	<i>Process</i> Outcome
	FRM measures deliver multiple benefits, for example economic, social and/or environmental benefits or address multiple problems (thus reducing the	<i>Process</i> Outcome <i>Impact</i>

	need for multiple schemes/projects at added cost)	
	The legal framework, the overall process of decision-making and delivered activities are described as efficient by relevant actors and stakeholders	Outcome

tab 3. Alexander et al (2016)' evaluation framework stripped by locus of evaluation of process and impact.

In this study it was further exploited Farre-Mensa & Ljungqvist (2013)' empirical findings on structural barriers that influence firms and organizations. They have indeed investigated financial constraints over public firms and they discovered that public firms that lack of financial capital, do not act as they were financially constrained. According to their work such behaviour occurred due to possibility of taking loans from other bank funds.

The outcome of their research influenced in part this study as the conceptual model and the method of investigation relied mainly on qualitative source of data. The investigation of resource efficiency for instance, based on Alexander et al (2016) framework of evaluation, aimed to gather information on the "perception" of lacking or abundance of resources by the civil servant. Moreover, the perception of "structural" barriers should be considered as a primary constraint; the research in this case, investigates on the sensory awareness of actors of structural constraints, basing the process of data gathering on qualitative approaches. The structural barriers are in this research interpreted as being part of the reticence forces that impede to the meso-level conceptualized by Rotmans et al (2001) to change.

Regarding benchmarks for determining the extent to which flood risk governance supports societal resilience:

Evaluation criteria	Benchmark of success	Dominant locus of evaluation
Capacity to resist	The assembly of measures/projects or governance arrangement is shown to have enhanced the capacity of the social-environmental system to reduce the likelihood and/or magnitude of flood hazard	Outcome <i>Impact</i>
Capacity to absorb and recover	Diversity of measures/projects/or RM strategies to address risk in a holistic way	Outcome
	Use of measures/projects/FRM strategies is multi-layered to address risk at different spatial and temporal scales	Outcome
	The assembly of measures/projects/or governance arrangements is shown to have enhanced the resilience of the social environmental system in terms of reducing the consequences,	Outcome <i>Impact</i>

	enabling the system to absorb and or quickly recover	
Capacity to adapt	Opportunities are created for innovation and experimentation	<i>Process</i> Outcome
	The legal framework or legal instruments/plans and programmes are subject to periodic review proceedings in order to incorporate new information about climate change and floods	<i>Process</i> Outcome
	Evidence that future risks and uncertainty (e.g. climate change) are factored into the decision making process	<i>Process</i> Outcome <i>Impact</i>

tab 4. Alexander et al (2016)' evaluation framework stripped by locus of evaluation of process and impact.

Table 4 shows the refined Alexander et al (2016) method to evaluate societal resilience. It was stripped by locus of investigation different from outcome (Impact, Process). Such choice occurred because Alexander et al (2016)' framework of evaluation was not conceived as a mean to evaluate policy impacts and as such it had to be refined in order to be merged coherently with Carter et al (2015) method to assess policy divergence. In this process the criteria referred to outcome provide a comprehensive framework for data gathering while the criteria referred to Impact would result redundant due to the very nature of this research and criteria referred to Process would be of no use for the research as it focuses on subsequent policy stages.

Further discussion on the importance of gathering data qualitatively is carried on in parallel to the proposition of the conceptual model.

2.5 Divergent elements and pivotal factors of success (Conceptual model)

As it was previously introduced in this study, issues relative to floods events are strictly tied to the mutation of climate behaviour and are increasing both in frequency and intensity (European Environmental Agency, 2012). The European Union elaborated the FRMD which purpose is to support the Member States in managing flood risks, however the Eurozone is characterized from a wide variety of planning systems (Nadin & Stead, 2008) and the transposing of the Directive could impact such institutional settings.

It was further argued that while European instruments such as FRM 2007/60/EC may likely constitute likely an advantage for countries that have little institutional experiences in matters of FRM (as the European provides tools and support for their implementation), it may be not so for experienced traditional FRM strategies. This research investigates therefore on institutions reliable for FRM policies building on Williams (2008) pledge to increase the attention payed to the gap between higher and lower level of bureaucracy. Such gap it was addressed as a purpose to reduce the gap between planning theory and practice as it collects concepts from other theories elaborated within the academic context that deal with policy implementation issues (closer to practice) and policy divergence (closer to theory). Carter et al (2015)' method to assess policy divergence it was employed in order to assess qualitatively what were defined as being DE (divergence elements). The evaluation of these elements constitutes the first essential part of the conceptual model proposed in this research (Figure 2) as it is needed to in order to evaluate significant differences between FRMD and TFRM policies. However the method related to DE alone it is not sufficient to answer the main research question. Alexander et al. (2016)' revised framework for flood governance resulted necessary in order to complement the first component of the conceptual model; In this study the key factors of the framework were readapted in order to be coupled with Carter et al (2015) method of assessing policy divergence.

According to Sabatier (2007) in order to make a fair judgement on policy analysis it should waited a minimum of 10 years because that is the time required for the emergence of problems in relation to the policy's effectiveness. However in this research it was not attempted to evaluate the effectiveness of the FRM policy. The study proposes a mean to investigate impacts of a FRMD while independently from the stage of transposition of the policy. By conducting two parallel investigations, one based on merging Alexander et al. (2016)'and Carter et al. (2015)' frameworks and the other based on assessing degree of policy change perceived, it was further argued that is possible to understand where the FRMD impacts the TFRM strategies.

It is argued that the analysis of policy divergence should reveal intrinsic differences between renewed and the traditional policy. It was further argued earlier how the "old" and the "new" policies are linked by substantial differences between the two in effectiveness and societal resilience. Lastly, the assessment of degree of policy change in relation to the issuing of FRMD completes the conceptual model with a mean to identify whether policy change occurred due exogenous or endogenous influences over the system. This allows, in turn to verify what are the actual impacts of the transposition of the FRMD on local contexts by comparing the results of the two components "change in policy success and policy divergence" with the "degree of policy change" in relation to the year. In sum, the conceptual model provided in this section it is argued that it would be able to narrow the gap between theoretical and practical evaluations and could be used as a mean to perfectionate the transposition of the FRMD.

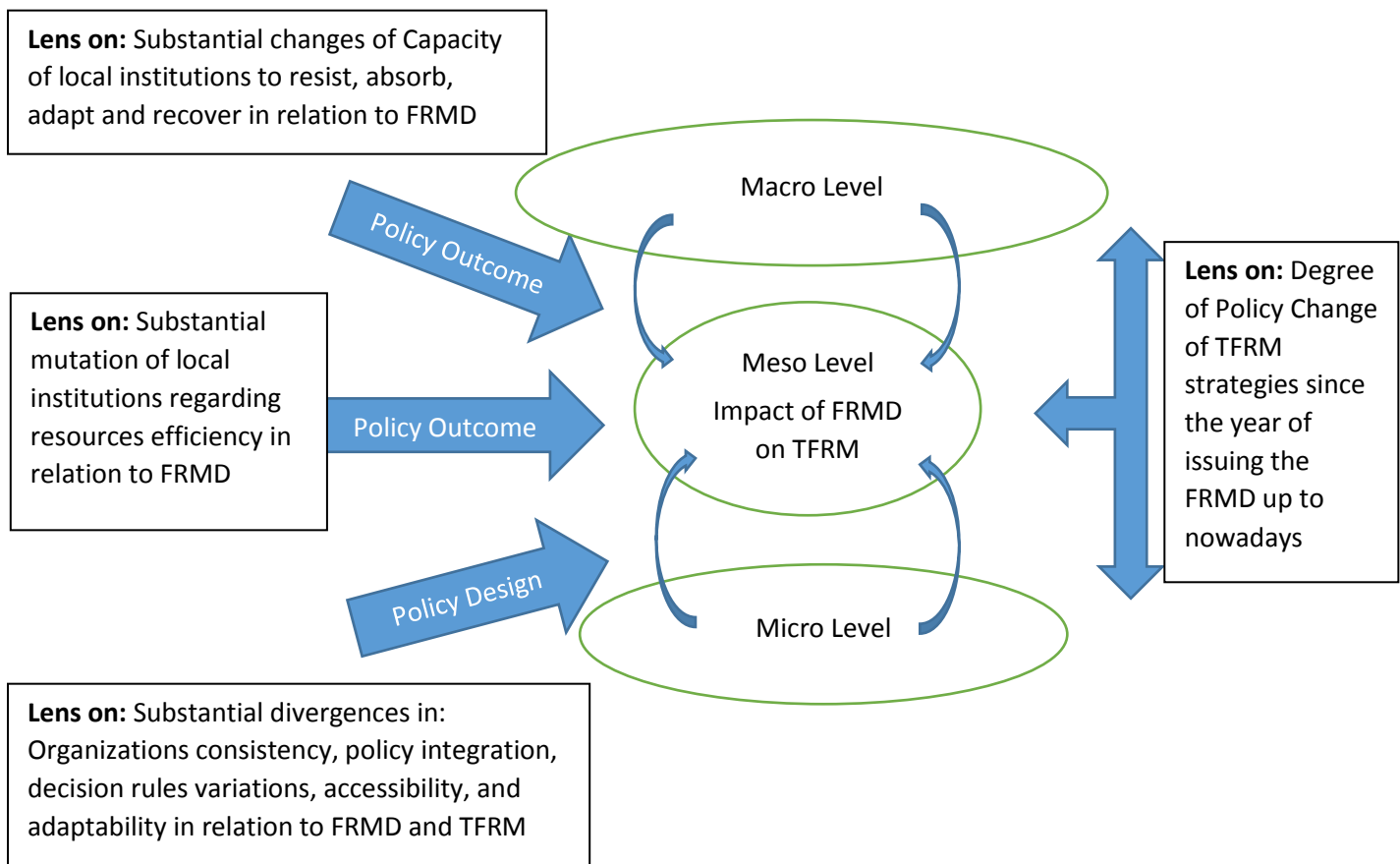


Fig 2. Conceptual model built out of merging Alexander et al.' (2016) and Carter et al.' (2015) methods, respectively on flood governance evaluation framework and assessment of policy divergence and the degree of policy change. TFRM- traditional flood risk management; FRMD- flood risk management Directive 2007/60/EC.

Above it is pictured a schematization of the conceptual model proposed in this research as a mean to evaluate impacts of FRMD on TFRM. The three arrows above (left side) indicate the factors that could have significantly changed up to recent dates respectively on what concerns societal resilience and resource efficiency with an additional lens over policy divergence. The elements on the left side have a focus on the meso-level due to the interest of the research to focus over institutional changes that are related to endogenous institutional inputs. The fourth element (right side) stands as a mean to measure change that occurred in relation to all the layer of the system and comprises therefore endogenous and exogenous influences over the meso level.

Figure 2 is a visual configuration of what so far discussed in the thesis. On the left side of the figure (2) it can be seen the framework of evaluation of flood risk governance (Alexander et al, 2016) in relation to the issuing of FRMD. On the same side (below) the method for assessing policy divergence (Carter et al, 2015) is drawn in relation to the differences between FRMD and TFRM. Lastly on the right side the degree of policy change is meant to measure change dependent on exogenous and endogenous influences over the meso-level.

The conceptual model was re-elaborated in the following Chapter (Table 5) as a mean to conduct investigation. While this Chapter related mainly on the reasons "Why" this model could be useful to research and how it relates to the topic discussed, the next section is dedicated to describe "How" "What" and "Where" the model was employed in order to be validated.

Chapter 3

3 Methodology of the research

The objectives of this research is to provide a better understanding on how the FRMD impacted Member States Traditional Flood Risk Management approaches. It is relevant to mention a priori that this research constitutes an explorative research and as such needs further research to be empirically validated. The theoretical framework constructed through literature review has partial validity as it has not been tested in multiple case studies; it therefore awaits for empirical validation to be provided with further research. The selection of the study case methodology was important for this thesis given that it is imperative to test the framework and assess the criteria constructed in the literature review.

This chapter discusses the elements on which the methodology of the research is based upon. The arguments are provided on “what” and “why” certain strategies were chosen for the development of this thesis. Moreover, In the section I also discuss the rational for choosing the certain elements to recover empirical data and reflect on the possible pitfalls and shortcoming’s.

3.1 Research strategy

Yin, in his work “Case study Research: Design and methods (2003)”, offers a guideline to establish the most appropriate research strategy to support academic investigations. According to Yin’s argumentations the research question is the element which directs the choice of the most suitable research strategy. Given that this thesis is trying to answer the question of “*What is the impact of the Flood risk management Directive on the Italian traditional Flood management policies?*” Yin suggests that an exploratory case study maybe the best option to meet the research objectives.

He further argues that when scholars need to establish “How” and “Why” a certain program (or policy as for this case) succeeded the most favourable choice should be either a case study or a field experiment. By a preliminary investigation on Italian progresses in FRMD implementation on the European Overview Report on PFRAs (2014) and FHRMs (2012) it is assumed that the case is emblematic, as progress towards the compliance of the FRMD cannot be clearly evaluated.

This research deploys therefore the case study strategy in order answer the research question as a thorough investigation on the process of implementation of the Directive within a limited area of investigation could unveil unnoticed flaws of the FRMD itself.

Although I acknowledge that research strategies based on single case studies are often incomplete, they provide the researcher with a deep understanding on the issue at hand in a reasonable amount of time allowing to set relative achievable objectives (Gillham 2000the exploratory case study shall help to test the conceptual model (Figure 2) for the evaluation of the impact of the FRMD that should be applied in similar contexts in order to be definitively validated. In the first section of the research the foundation was laid for the creation of such a framework with which data can be sorted.

Concerning the issue of validity, Lawrence (2007) asserts that a mean to provide validation, is through what he calls “natural history validity” which is achieved by offering a detailed description of how the research was conducted (informing the reader about researcher assumptions, propositions and procedures undertaken). Furthermore, the research exploits therefore both, Yin (2003)’s suggestions for “proper research design” by identifying propositions, unit of analysis and by providing logic links between data and propositions, and Lawrence (2007) indication on conferring validity to this study.

The investigation is characterized by the principal proposition that the transposition of the FRMD could procure unexpected implication for local traditional approaches and that such unexpected implications could be measured through deployment of the conceptual model (Figure 2) developed according to literature review. This proposition, along with literature review, were used as means to identify the unit of analysis that the case study will be focused on.

Propositions and Unit of Analysis.

The research question “**What is the impact of the Flood risk management Directive on the Italian traditional Flood management policies?**” contained the elements that supported the creation of legitimate propositions. Literature review and interpretations of a range of conceptualizations from various scientific domains (e.g. institutional design, policy sciences, political sciences) devised the conceptual model (Figure 2) which exploits Rotmans et al (2001) views on multi level systems as a mean to identify the most relevant locus of investigation. Yin (2003) states in his work that the proposition is fundamental in locating the relevant information about the Unit of Analysis. Given that the focus of the research is on potential impacts that the FRMD have over TFRM policies the Unit of Analysis established in this research are the institutions that have relevant roles in the decision making process of the TFRM strategies.

The research develops on the case study of Liguria, which was selected due to the increasing damaging events of the past decade (ISPRA, 2016) and due to its dynamic legislation in matter of FRM policies (Legge n.183/1989, Legge Regionale n.9/1993, Legge n.208/2004, D.lgs n. 152/2006). The institutions that had influential roles over the FRM strategies were mainly governmental authorities: Regione, ARPAL, Protezione Civile Regionale and Provinciale (Legge Urbanistica Statale 1942/1150) and a list of non-governmental institutions that have a consultancy role over the process (ISPRA, CIMA, universities associations). Regardless, in different Member States, the spectrum of institutions that have influence over the TFRM approach could be wider and it should be investigated by the researcher that employs the conceptual model proposed (Figure 2).

Conceptualizations made by the academic community over “institutions” and multi-level systems” made in the previous Chapter contributed to narrowing the locus of potential tensions and frictions that can occur during the process of transposition of a Directive. Regarding the third core for a proper research design as defined from Yin (2003), “logical connections” it is entirely covered in the following sections (3.2.1, 3.2.2).

The strategy employed to gather data was based on two methods. The first method refers to qualitative data collection that relies on the snowball approach; after a prior investigation on the most influential institutions over the management of flood risk strategies (indicated in Table 6), it was individuated the civil servant that indicated relevant experts to interview. The “snowball” therefore begun with holding contacts with civil servants that had managerial roles so that, the selection of the most suitable expert to be interviewed could rely on actors with a wider perspective on local FRM strategies (table 6). Secondly a selection of the most relevant policy documents was necessary for a content analysis and support the data triangulation in the further phase. The documents were indicated by the experts interviewed. The software Atlas.ti was used lastly as a mean to code information gathered and link interview transcripts with related policy documents.

3.2 Data Collection

As mentioned in previous sections, in this research it was elaborated a connection between degree of success in policies and the impact that FRMD has on TFRM approaches. Such success was assessed in relation to the end of the policy cycle (outcomes) as this allowed to create a conceptual model that benefits from both of Alexander et al (2016) and Carter et al (2015)' frameworks for evaluation. Alexander et al (2016)' framework for flood risk management governance evaluation was adjusted as it could not account thoroughly for the evaluation of the policy change in relation to exogenous inputs (FRMD). Carter et al. (2015) re-shaped framework is therefore used as a mean to complement such flaw. On the other hand, it is also argued that Carter et al (2015)' assessing policy divergence method could benefit from Alexander et al (2016)'s framework centred on policy outcomes; outcomes are a physical manifestation of a policy implementation and as such it is argued in this thesis that it represents a key factor to assess a policy change impact.

An adjustment of both frameworks was therefore necessary as they were conceived to work in isolation. Carter et al (2015)'s method for assessing policy divergence has focus on both outcome and design of policies. The divergent elements are in this case evaluated on the component called "policy design", while the criteria that are used to assess outcomes were overlooked as these were already thorough in Alexander et al (2016)' framework for evaluation. The latter identifies a wider range of criteria that assess policy success on flood risk management governance. In turn, this framework was stripped of the dominant locus of evaluation that focuses on "Process", as it was sufficiently covered in Carter et al. (2015)'s framework as argued in Chapter 2. The two joint framework (elements of evaluation) are presented in Table 5 along with an overview of: Questions, timing for data collection, sources, methods and analysis.

3.2.1 Alexander et al. (2016) elements of evaluation- Resources efficiency and societal resilience

The six policy statements will be assessed as they are today through qualitative research (interviews on the most appropriate authorities/organizations that are in charge of flood risk policies implementations). The FRMD establishes that member states have to identify competent authorities regarding flood risk management policies. Considering the Liguria case study there were communicated to the European Commission three Unit of Management (National, Interregional and regional). The interviews with civil servants operating in these organizations were selected hierarchically or in other words, an attempt to communicate with actors was made according to their responsibilities within the respective firms; the higher their position in the firm's hierarchy the more favourite they were for gathering information. The questions posed on the interviews with civil servants aimed to answer to the questions highlighted below (Table 5), however the structure of the questions in the interview form has been reduced to minimal terms in order to avoid false interpretations with the interviewed (Appendix A). It is relevant to mention that the research question provides a guideline itself when coupled to Alexander et al. (2016) and Carter et al. (2015)' framework for evaluation.

"What is the impact of the FRMD on the Italian TFRM?"

Independent variable

Dependent variable

The interaction between these two variables is analysed under a temporal point of view. The questions are posed as a mean to investigate a timeframe that goes from 2010 up to the moment of retrieval of Data.

Such window of time was chosen due to the issuing of the law relative to the FRMD by the Italian government Decreto Legislativo N°49/2010, from this point onwards abbreviated to D.lgs 49/2010.

The questions were formed in a way that they required the interviewed to give the present assessment of each of the elements as they are today and what, according to their perception, has significantly changed (among the elements composing the framework) since the notification of the Directive. Lastly the elements were cross-checked with Document analysis when possible.

3.2.2 Carter's et al. (2015) Method to assess Divergent elements

The same approach used for data gathering on resource efficiency and societal resilience was employed to carry out information on policy design. Carter et al. (2015) list eight criteria that should be looked upon when policy divergence want has to be assessed. Many among the elements proposed comprehend an analysis on policy outcome, however, coherently to the argumentation provided earlier in this study, the elements of analysis have been decomposed in order to be used as a mean to assess divergence only in policy design. The re-shaped framework provides elements for evaluation on:

- a. Clarity and Consistence
- b. Consistency of Government agency mission with policy objectives
- c. Hierarchical integration within and among implementing organizations
- d. Decision Rules by implementing agencies
- e. Formal access by outsiders
- f. Adaptability of the policy

3.2.3 Research Strategy overview

To use qualitative research methods there are a few options to consider: semi-structured or unstructured interviews as Doody et al. (2013) distinguish in their work structured, semi-structured and unstructured frameworks for interview. In this research the semi-structured approach was chosen and it involved the use of predetermined questions based on the readjusted Alexander et al. (2016) and Carter et al. (2015)'s frameworks for evaluation. The interview forms are conceived in a way that allow for deviation from the original track in order to deliver a degree of flexibility and allow this research to investigate on paths that could have not been considered initially (Gray, 2004). The table below (5) synthetizes the information provided in this Chapter to provide an overview to the reader.

Reminder: In the table below the dependent variables are already embedded (Decree 49/2000, Liguria Region, 2010) and policy documents are relative to the case study. It is relevant to remind the reader that the questionnaire submitted to the civil servants were the two columns “Questions” and “Likert Scale Value” (Degree of change) as they are the composing parts of the conceptual model (Figure 2). As it was earlier argued, the questions asked were therefore taken from Carter et al (2015) and Alexander et al (2016) frameworks of evaluation. A copy of the questionnaire employed in the interviews is available in Appendix “A”.

<u>Elements of evaluation</u>	<u>Questions</u>	<u>Likert Scale value (To be given by the civil servant interviewed) 1-7</u>	<u>Time of gathering (January, February, March 2017)</u>	<u>Source</u>	<u>Method used for collecting data</u>
Capacity to resist (societal resilience) <i>Alexander et al (2016) Table 4.</i>	How government arrangements taken subsequently to the issuing of Decree 49/2010 have been influencing the likelihood of flood hazards in Liguria?	Give a weight (from 1 to 7) to the changed likelihood of flood hazard due to the influence of government arrangements subsequently to the D.Lgs 2010 in Liguria.	During interviews. Triangulation of data with document analysis of Italian reports on flood risk whenever possible (carried out subsequently to interviews).	Civil servants (Tab 5), Policy documents (Piano di Bacino), reports	Policy documents indicated by the interviews to civil servants among the organizations investigated
Capacity to absorb and recover (societal resilience)	How, consequently to the Decree 49/2010 the routine of flood risk management has changed? Have new management strategies influenced the traditional approach to flood risk management?	Give a weight (from 1 to 7) to the degree of change of institutional routine relative to new FRM strategies subsequently to D.Lgs 2010. In Liguria.	During interviews. Cross-checking with relevant documents. Selection of documents is subsequently to interviews.	Civil servants (Tab 5), Policy documents (Legge 124/2016), reports (Ispra 2016)	Policy documents indicated by the interviews to civil servants Autorità di Bacino of Liguria region
	How the change in flood risk management policy influenced plans on both temporal and spatial scales subsequently to the D.Lgs of 2010 in Liguria?	Give a weight (from 1 to 7). To what extent change in FRM influenced plans on temporal and spatial scales subsequently to D.Lgs 2010?	During interviews. Analysis of FM policy plans subsequently to interviews.	Interviews with Civil servants (Tab 5) and policy documents as PGRA (2015) and PAI Plans.	Policy documents indicated by the interviews to civil servants within Autorità di Bacino of Liguria region
	Have measures, projects or government arrangements undertaken subsequently to 2010 influenced the likelihood of flood consequences in Liguria? How?	Give a weight (from 1 to 7). To what extent measures, projects or government arrangements deployed subsequently the D. Lgs 2010, influenced the likelihood of flood consequences?	During interviews. Analysis of policy documents subsequently to interviews if relevant.	Civil servants (Tab 5), Policy documents (Italia Sicura), reports	Policy documents indicated by the interviews to civil servants within Autorità di Bacino of Liguria region
	<i>Alexander et al (2016) Table 4.</i>	In case of flood, Have roles of institutions on territorial and social recovery changed subsequently to 2010? How?	Give a weight (from 1 to 7) on the level of change relative to the change of roles of institutions in social recovery consequently to the D.Lgs.	During interviews.	Civil servants (Tab 5) and policy documents (PGRA 2015)

					region and when necessary within provincial offices.
Capacity to adapt (societal resilience)	How formal arrangements that influence the learning process of institutions have impacted this organization in consequence to the Decree 49/2010?	Give a weight (from 1 to 7). What is the degree of change of arrangements that favourite the learning process of institutions subsequently to the D.Lgs?	During interviews.	Civil servants (Tab 5). Policy document (Modulario PC-PA- 60)	Semi-structured interviews to civil servants from within Autorità di Bacino of Liguria region
	Has room for innovation and experimentation, increased subsequently to 2010? How	Give a weight (from 1 to 7). What is the extent of change of room left from the Regione Liguria to innovation and experimentation?	During interviews	Civil servants (Tab 5).	Semi-structured interviews to civil servants from within Autorità di Bacino of Liguria region
	<i>Alexander et al (2016) Table 4.</i> How did the review proceedings relative to incorporate new information about potential future risks (e.g. climate change influences) have changed subsequently to the Decree 49/2010 in the TFRM approach?	Give a weight (from 1 to 7). To what extent Is the timing of periodic review proceedings relative to incorporate new information about climate change, changed?	During interviews.	Policy documents, reports (PAI- Piani di Bacino regione Liguria- PRGA) and civil servants (Tab 5)	Analysis of documents relative to FRM previously to the implementation of D.lgs 2010 (Piano di Bacino)
Resources efficiency (including economic, human (personnel, skills and knowledge) and technological resources)	How the deployment of resources (financial and human) has changed consequently the issuing of Decree 49/2010 in this organization?	Give a weight (from 1 to 7). What is the extent of change in efficiency of resources expenditure subsequently the D.Lgs 2010?	During interviews.	Civil servants (Tab 5).	Semi-structured interviews to civil servants from Autorità di Bacino of Liguria region
	How the TFRM approach has changed in terms of integrated approaches consequently to the Decree 49/2010? (e.g FRM measures that reduce the need for multiple schemes at added costs)	Give a weight (from 1 to 7). What is the extent of change in benefits due to FRM measure in terms of integrated approaches?	During interviews.	Civil servants (Tab 5).	Semi-structured interviews to civil servants from Autorità di Bacino of Liguria region
	How, consequently to the Decree 49/2010 has the efficiency of the	Give a weight (from 1 to 7). What is the extent of change in the efficiency of the overall	During interviews.	Civil servants (Tab 5).	Semi-structured interviews to civil servants from

<i>Alexander et al (2016)</i> <i>Table 3.</i>	decision-making process relative to the TFRM approach changed?	process of decision making and delivered activities subsequently to the 2010?			within Autorità di Bacino di Liguria region
Clarity and Consistence	How, consequently to the Decree 49/2010 has the capability of this institution of reaching normative objectives, been affected?	Give a weight (from 1 to 7). To what extent is the D. lgs n° 49/2010 and regional implementation laws, consistent with obtaining policy goals dictated by the FRM 2007/60/EC?	During and subsequently the interviews. Policy document analysis (PRGA-FRMD-European commission reports on Member State progresses)	Civil servants (Tab 5), Policy documents (Legge 124/2016, PGRA 2015), reports	Semi-structured interviews to civil servants from Autorità di Bacino of Liguria region and review of relevant documents indicated in the interviews by the civil servants.
<i>Carter et al (2015)</i> <i>Table 2.</i>					
Hierarchical integration within and among implementing organizations	How have the roles of implementing agencies changed consequently the Decree 49/2010?	Give a weight (from 1 to 7). To what extent roles and competences have changed subsequently the D.Lsg 2010?	During interviews and confirmation of such subsequently to interviews through policy document analysis	Civil servants (Tab 5), Policy documents (D. lgs 49/2010, Legge 124/2016), reports	Semi-structured interviews to civil servants from Autorità di Bacino of Liguria region and review of relevant documents indicated in the interviews by the civil servants.
<i>Carter et al (2015)</i> <i>Table 2.</i>	How has the number of sanctions or monitoring processes relative to the obtainment of the normative objectives have changed consequently the Decree 49/2010?	Give a weight (from 1 to 7). To what extent directives for monitoring and enforcement instruments have changed subsequently to the issuing of D.Lgs 2010?	During interviews and confirmation of such subsequently to interview through policy document analysis	Civil servants (Tab 5), Policy documents, reports	Semi-structured interviews to civil servants from Autorità di Bacino of Liguria region and review of relevant documents indicated in the interviews by the civil servants.
Decision rules by implementing agencies <i>Carter et al (2015)</i> <i>Table 2.</i>	How has the interest of this organization towards the pursue of normative aims, been changed consequently the Decree 49/2010 in Liguria?	Give a weight (from 1 to 7). To what extent the support of reaching objectives in the flood risk management policy has changed?	During interviews.	Civil servants (Tab 5).	Semi-structured interviews to civil servants from within Autorità di Bacino of Liguria region

Formal access by outsiders <i>Carter et al (2015) Table 2.</i>	How has the accessibility for actors outside the process of elaboration of flood risk management plans been changed consequently the Decree 49/2010?	Give a weight (from 1 to 7). To what extent has formal access to political supporters outside the Regione Liguria changed subsequently to the D.Lgs 2010?	During and subsequently to interviews.	Civil servants (Tab 5), Policy documents (Regional offices reports on websie)	Semi-structured interviews to civil servants from within Autorità di Bacino di Liguria region and review of relevant documents indicated in the interviews by the civil servants.
Adaptability of the policy <i>Carter et al (2015) Table 2.</i>	How the Decree 49/2010 has influenced the organization reliable for its adaptation towards the pursue of normative aims?	Give a weight (from 1 to 7). To what extent the policy design that enables the adaptation of Regione Ligura for achieving the policy outcomes, changed subsequently to the D.Lgs 2010?	During interviews.	Civil servants (Tab 5).	Semi-structured interviews to civil servants from within the Autorità di Bacino of Liguria region
Grouping data method			Recording interviews, transcribing and coding interviews.		
Analysis			Using codes as a mean to identify sub-elements of change. Whenever codes form a pattern a content analysis of the most relevant policy documents was carried out with the intent of validate (or debunk) experts' views.		

Tab. 5. Summary of information sought, proceedings, timing, subjects/objects involved. *Sources it is covered in detail in Tab 5.

The Table above includes the three components of the conceptual model presented in Chapter 2; the first column presents the elements to evaluate policy success and policy divergence, while the method to understand the degree of policy change is shown in the third column (Likert scale). The procedure to assess the degree of change is based on the actor interviewed who had to assign a weight on the extent of change from 1 to 7 on each answer, followed by further elaboration on motives of the value assigned. The type of data gathered with this method is the “extent of change” and it gave the advantage of providing uniform empirical results. Such approach was deployed because able to provide a first insight on what are the most influential elements of change free from researcher interpretations.

A pitfall on the framework of Data gathering consists in the fact that the relevant document analysed are suggested by the civil servants interviewed and therefore are likely to enforce their statements rather than challenge it.

3.2.4 Contextualizing the framework for evaluation

The conceptual model proposed in theory (Figure 2) is used in order to identify the most suitable locus of evaluation according to the theoretical propositions made earlier in this thesis. The institutional changes on the Meso-level represent the starting point of the whole investigation. While the Geels (2002) and Rotmans et al. (2001)' conceptualization of multi-layered systems, supported the identification of institutions as unit of analysis, on the other hand there is the issue of identifying which institutions has relevance under the point of view of FRM policies. By focusing on the dependent variable it is possible to narrow down the range of institutions that should be investigated. The institutions that influence the TRFM approaches in this case study are mainly governmental, and four of these, accordingly to civil servants interviewed are of most influence in the TFRM strategy. In conclusion, table 6 shows who was selected through the employment of the snowball approach.

Interviewed n°/ Role	Organization	Relative appendix
1 / Managerial role	ARPAL	Appendix D
2 /Managerial role	Regione Liguria (UoM)	Appendix E
3 /Collaborator	Protezione Civile Regione	Appendix F
4 / Chief engineer	Regione Liguria (UoM)	Appendix G
5 / Engineer	Regione Liguria (UoM)	Appendix H
6 / Engineer	Regione Liguria (UoM)	Appendix I
7 / Spokesman	Protezione Civile Provincia	Appendix J

Table 6. Summary of civil servant interviewed with respective role and relative appendix in which transcripts can be found in original language. *UoM: Unit of management

The table above shows the institutions that according to prior investigation are the most influential (in the case study) to TFRM approaches and the respective roles of civil servants that were interviewed during this investigation.

3.3 Framework for data analysis

The data gathered from the interviews used, was transcribed in Italian and is available in the appendices (Table 6 links the appendices with the correspondent interviewed). The transcriptions were coded in order to highlight institutional changes that the conceptual model (Figure 2) brought to surface. Once that the interviews and the coding were carried out, the data was triangulated by cross-checking the codes with official documents that could sustain or undermine the validity of the data collected. This approach provided a mean to widen the spectrum of suitable documents for policy analysis without the direct intervention of the civil servant interviewed. This approach was employed to overcome the possibility of deliberate misinformation or negligence (King & Horrocks, 2010) from the civil servants.

The data collected through the employment of the framework (Table 5, column 2 and 3) were of two different types. The experts were asked to assign a value to the degree of change of each elements of evaluation based on Liker scale method. This value worked as a mean facilitate comparison with the results of the interviews and assess whether the policy change occurred due to influences internal to the Meso-level (Rotmans et al, 2001). The process of coding of interviews was also carried out as mean to transform qualitative data into information that could be elaborated and linked directly to the theoretical discussion.

3.4 Limitation and potential problems

It is fundamental to test logical statements asserted in theory in order to prove that data gathered and their analysis is trustworthy, credible and confirmable (Yin, 2003). This research seek validity through “naturalistic validation” which corresponds to the approach of describing thoroughly theoretical links to methodology, analysis of data and assumptions made in the research. However, limitations to such approach persists. Firstly, the data gathered is collected in a different language than English and the translation of information assembled could result not entirely corresponding to the original version. Secondly, this approach relies mainly on triangulation of Data that is led by previous interviews, therefore there is always the risk that the civil servant interviewed (un)intentionally omitted relevant information for the validity of this study (King & Horrocks, 2010). Lastly, the selection of civil servants to interview is based on the snowball approach and the unsuitable selection of the first expert could lead to inconsistent sort of data.

Chapter 4

4 Findings on FRMD impacts over the TFRM approaches

4.1 Introducing and reviewing

The data analysis presented the key issues and insights that I reflect upon in the following paragraphs. Floods events are increasing throughout the whole European territory (European Environment Agency, 2012). The European Union issued the FRMD in the attempt to provide Member States with an institutional tool to face the issue. The most relevant European Directive that has been issued so far, is the Flood Risk Management Directive 60/EC/2007. In this the diversity of the Member States planning systems (Nadin & Stead, 2012) in which the FRMD have to be transposed, was highlighted. Furthermore, Members States have different degrees of socio-territorial vulnerability in terms of flood risks. Italy is a country among many in EU, that has an exceptionally vulnerable territory (ISPRA, 2017) and it employs consequently its own TFRM strategies in order to face the issue of flood risks. It was further argued that an unsuccessful policy change in FRM could undermine a functioning TFRM strategy and it could have significant impacts upon institutions and civil society. This assumption is directly related to the research question posed below.

“ What is the impact of the Flood risk management Directive on the Italian traditional Flood management policies?”

The research is focused on exploring whether the implementations of the directive have had significant impacts on local institutional settings by deploying the conceptual model shown in Figure 2. The framework of criteria was constructed by unifying and refining Alexander et al. (2016) and Carter et al. (2015)' framework of evaluation along with the degree of policy change perceived by civil servants. The evaluation of policy success, policy divergence and degree of policy change were related in Chapter 2 together to the construction of a theoretical discourse to justify their conceptual relevance in relation to the investigation proposed. The case study research strategy was argued then in Chapter 3 to be the most suitable to lay the basis to find answer to the main research question. As it was argued in the previous Chapters, the research was undertaken at regional levels of governance in the attempt to make the conceptual model employable also for different Member States. It is also relevant to remind to the reader that the findings in this Chapter are not to be considered valid for the whole Italian peninsula but only for Regione Liguria. It was also earlier explained that this thesis constitutes an explorative research and it might need further research with multiple case studies in order to ultimately test the conceptual model. The Data was collected qualitatively; Interviews to experts in the field of flood risk management were carried out throughout a variety of actors from different organizations reliable for flood risk management policies (Table 6). Moreover, the information was gathered on reports over governmental websites and policy documents indicated by civil servants.

The following Chapter is structured in different sections; The first provides a description of the case study so that it can be understood were the civil servants were interviewed and why they were considered to be crucial to this investigation. Secondly, a reminder that refers to the framework of criteria of evaluation employed will be briefly recalled in order to give an accessible overview to the reader. Then the core of the chapter follows, with the section dedicated to reporting directly linked with the last section that is dedicated to compare to theory what the data collected highlighted.

4.2 Case study description

To be thorough it is relevant to dedicate a brief section to the description of the case study and the preliminary investigation that it was undertaken, before starting to report findings. Such description aims to enhance the validity of the research (naturalistic validation) and it aims to give an overview of the case study to the reader.

The territory taken under exam as a case study is institutionally divided consequently to the European Water Framework Directive 2000/60/EC in two Districts.

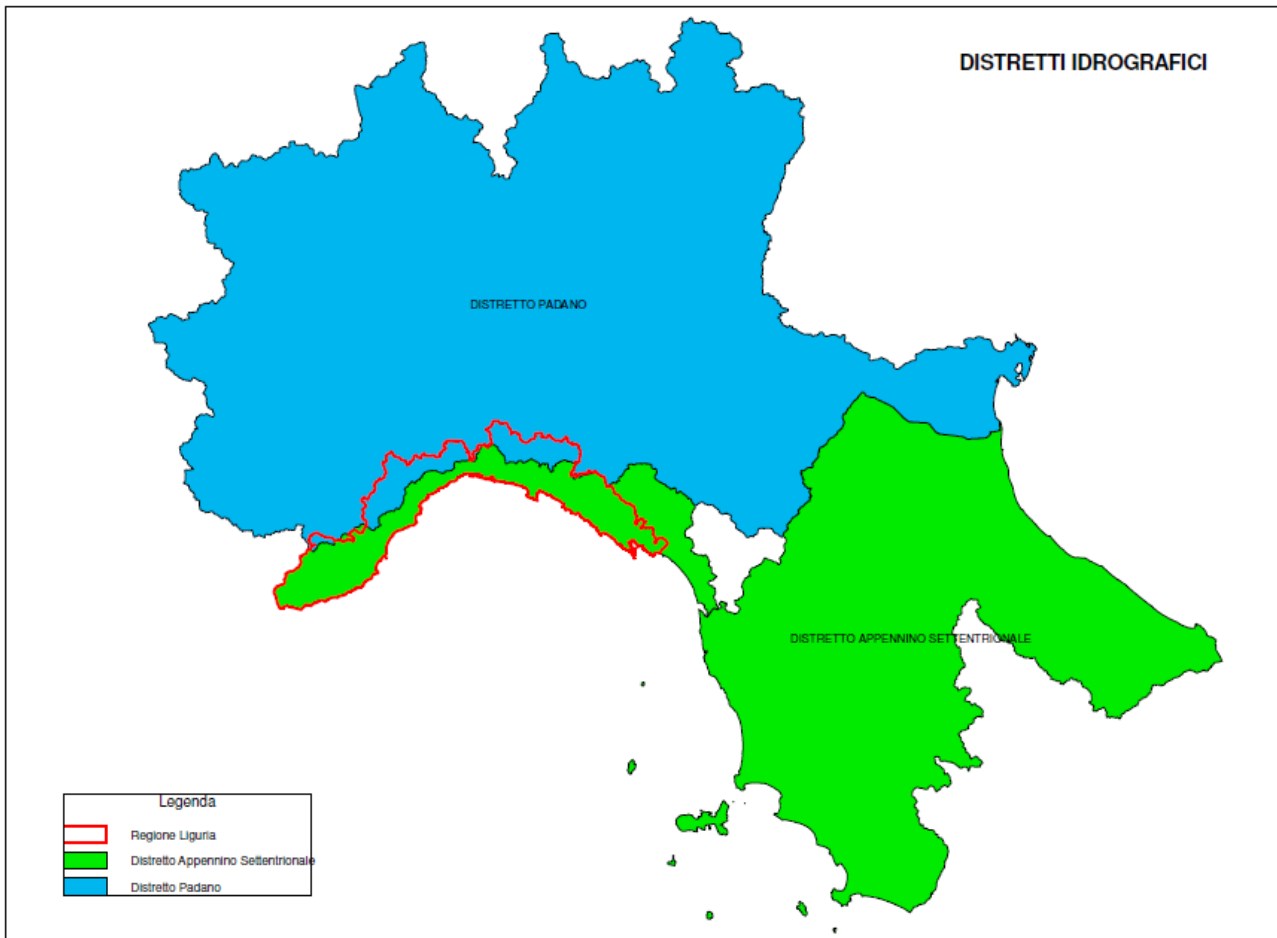


Fig 3. The picture above depicts the North-West side of Italy divided by Districts. The red line draws the borders of Liguria region (Case study). The picture represents the territorial division in relation to the Districts created in compliance of the WFT 60/EC/2000 (Source <http://www.ambienteinliguria.it/lirgw/eco3/ep/linkPagina.do>).

The European Commission required with the WFR 2000/60/EC Member States to identify authorities (Autorità di Bacino) reliable for the drawing of Piano di Bacino (territorial plan). Such plan is defined according to the website of the Liguria region, as a normative instrument that has value under technical-operational and informative point of view. The instrument is used by the regional authorities of competence (Autorità di Bacino) in order to delineate a line of action that aims to protect, defend and add value to the territory. The institution that was assigned by the Italian government as being regional “ Autorità di Bacino “ is the authority of Regione Liguria, which has direct influence over the Flood Risk Management policies. Such institution constituted the starting point for data collection with the deployment of the snowball approach mentioned in Chapter 3.

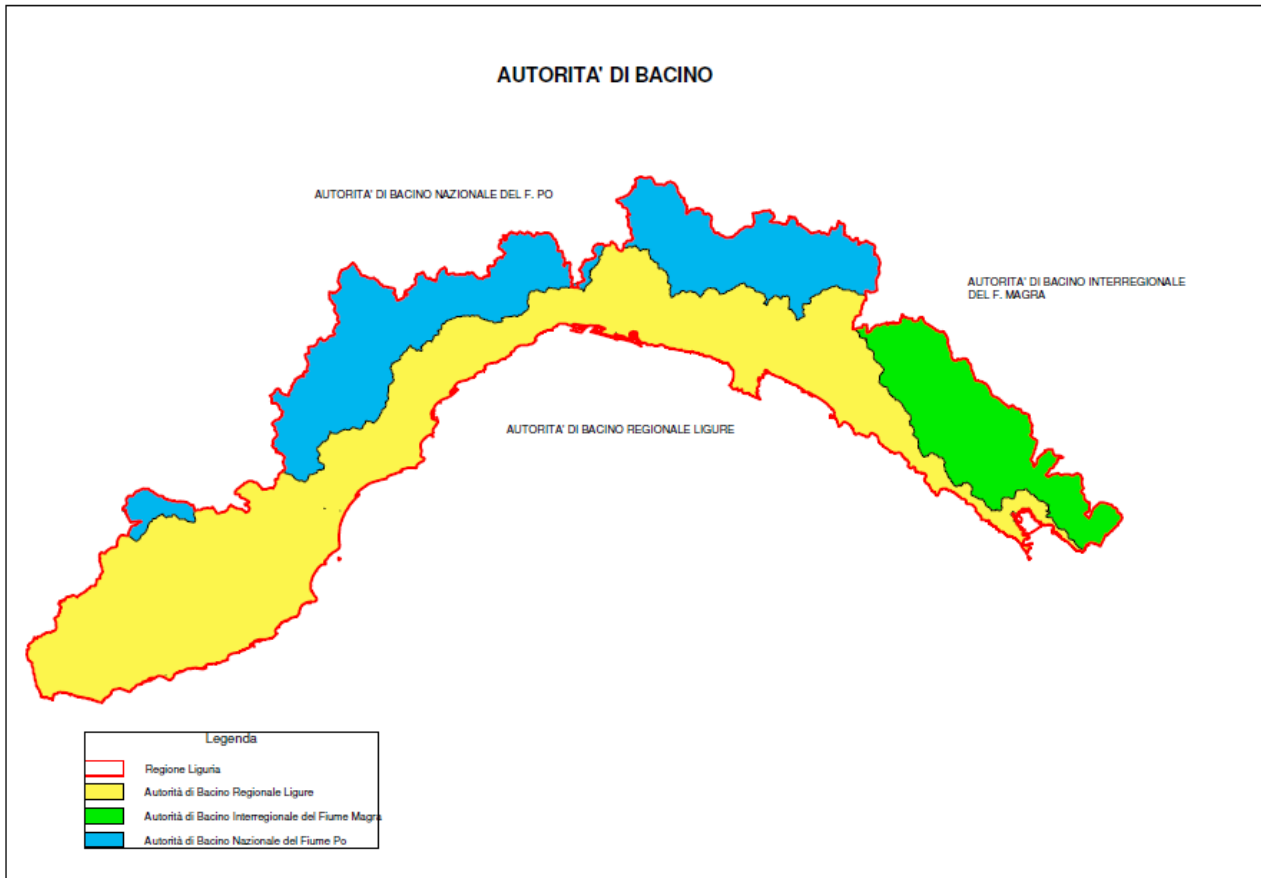


Fig 4. The picture depicts the three Autorità Di Bacino that have competence over the region Liguria. The red line draws the border of the region. (Source <http://www.ambienteinliguria.it/lirgw/eco3/ep/linkPagina.do>)

In the Chapter 2 conceptualization made by Geels (2002) on meso level or “patchworks of regime” was employed as a mean to define the Meso-level as being a conglomerate of institutions (semi)governmental and non-governmental.

It was further argued that National institutions should be excluded as locus of investigation. Such exclusion is due to the intrinsic nature of the conceptual model presented in Chapter 2 (Figure 2). National authorities were in this research conceived as having primary interest in deploying the conceptual model as a mean to investigate impacts that FRMD had on their institutional setting.

Moreover they were not investigated local municipalities as according to the Italian legislation (Legge Urbanistica Statale 1942/1150), municipalities do not play an active role on the planning processes, although it is acknowledged that they could have a degree of influence over the regional level. There were therefore considered the most influential institutions accordingly to the Italian legislation; governmental institutions on Provincial and Regional level. Non governmental institutions (ISPRA, CIMA) were excluded from the investigation due to their low degree of influence over the drawing of FRM strategies. Such institutions are concerned mainly with consulting roles within this sector while the decision-making power is fully retained by only governmental authorities (Consultancy roles, not binding).

4.2.1 Investigating Regional (semi) governmental authorities

From a preliminary investigation it resulted that there are four main organizations that are in charge of FRM on the regional level; Regional authority, ARPAL, Regional Civil Protection department and Provincial Civil protection department.

The investigation begun with Regione Liguria to which was assigned by National authority the role of “Unit of Management”. Such institution is composed by 18 offices (Listed in Appendix “c”). Prior investigation over the 18 offices contributed to settle the most relevant civil servant to be interviewed first. The selection of the most relevant expert was based on pyramidal hierarchy (the higher the rank within the firm the more favourite).

The investigation over the first most suitable civil servant to interview provided the advantage of highlighting the network of employee working within the public firm and in turn, it provided the advantage of identify channels of communications among the institutions reliable for TFRM strategy; The investigation over the regional offices highlighted the presence of other three institutions that had a significant participation over the TFRM decision making process (ARPAL, Protezione Civile Regionale, Protezione Civile Provinciale). It was further assumed that first civil servant selected with the “prior” investigation had a wider perception over the implementation of the directive due to their hierarchical position within the public firm. During the investigation, the questionnaire constructed through the theoretical framework (Appendix “A”) was submitted to all the interviewed selected. The questionnaire, as it was explained in Chapter 3 it was composed by two parts; the first worked as a mean to provide elaborated information to be coded later on in the research, while the second was employed to measure the degree of policy change perceived by the civil servant interviewed.

E.g. Capacity to resist.

Structured question. How government arrangements taken subsequently the Decree of 2010 have influenced the likelihood of flood hazard in Liguria?

Degree of change perceived. From 1 to 7, where 1 is “The likelihood of flood hazard is significantly increased”, and 7 is “The likelihood of flood hazard is significantly decreased”, **which degree of change perceived would you assign to the “degree of change of likelihood of flood hazard in Regione Liguria” subsequently to 2010?**

The approach described above was employed for all the questions of the questionnaire, and it gave an additional source of data for this investigation. The degree of change perceived in fact was based on the year 2010 (year in which the Italian legislation transposed the FRMD). By relating the question to the year rather than the issuing of the Decree itself, it was possible to highlight the policy change in relation to the criteria of the theoretical framework (Table 5). It is relevant to emphasize the fact that through the triangulation of the values of degree of change assigned by experts, and the interviews, it was possible to understand whether the policy change was to be attributed to the issuing of the Directive or to other influences.

However it became clear during the investigation that different competences of civil servants within the organizations had “slightly” different views on the degree of change. It could be therefore relevant for scholars that wants to employ the questionnaire based on the conceptual model elaborated in theory, to consider this drawback when using the theoretical framework employed for this research.

On the other hand, regarding the questionnaire, it became at times, useful to pose semi-structured questions as data gathered from two of the seven civil servants interviewed were lacking of significant information. In such case the semi-structured question posed was:

“On your point of view, how the flood risk management Directive influenced the sector of flood risk management in Liguria regarding your duty in the organizations and/or more in general, the organization itself? “.

By posing this question it was possible to collect information to compare in parallel to the other interviews gathered. However, the data collected with this approach were employed only as a mean to triangulate other interviews as it was not based on the criteria composing the theoretical framework. It is relevant to add that when this issue was encountered it provided data by itself due to the methodology employed for selecting civil servants. The ineffectiveness of the snowball approach could indicate that organizations are being excessively sectorial or it could indicate alternatively a lack of communication among them. However such drawback of data gathering could be related to the recent renewal of public administration (2015) and with its competences and roles of regional and provincial offices, or it could be related to little collaboration shown by the informer

4.3 Criteria of evaluation and degree of change assigned

As it has been mentioned in the previous section, this investigation gathered two types of structured data; the first on degree of change of the criteria in relation to the year 2010, and the second based on providing justifications for the degree assigned. This approach was employed in the attempt to highlight whether the Directive effectively impacted local institutional setting or other dynamisms influenced the policy change. The next section describes the degree of change assigned by civil servants to the framework of criteria to them given.

Notes: The following table should be used by the reader as a reference for the next section dedicated to reporting as a mean of comparison and overview.

Degree of change (1-7)	Interviewed 1	Interviewed 2	Interviewed 3	Interviewed 4	Interviewed 5	Interviewed 6	Interviewed 7
Likelihood of flood hazard	4	2-3	1-2	1	2	3	4
Potential consequences related to flood events	6	2	1-2	1	3	3	1
Routine TFRM approach	N	4	N	1	1	4	5
Plan designs and timing of interventions	6	1	N	1	N	N	N
Roles on socio-territorial recovery	2	2	N	2	2	N	5
Organization learning process	3	2	N	3	1	4	2
Accounting for future risks	5	5	2	5	4	N	4
Room dedicated to experimentation projects	2	2	N	N	N	4	5
Reviews timing	1	1	N	N	N	N	N

Resources expenditure	6	1	1	1	1	5	5
Integration of projects and/or intervention	1	1	N	4	N	4	5
Decision making process efficiency	2	1	N	1	N	5	5
Capability of reaching Normative objectives	6	3	N	1	N	4	2
Interests in reaching Normative objectives	2	2	N	1	N	6	N
Roles on implementation of interventions	1	1	N	1	1	4	5
Controls and sanctions	4	3	N	N	N	N	1
Accessibility to outsiders	1	4	N	1	2	4	4
Adaptability to change to reach normative objectives	6	3	N	N	N	N	4

Table 7. Degree of change assigned by interviewed relating to Likert scale from 1 up to 7, where 1 is “not changed” and 7 constitutes the maximum degree of change. The texture green indicates a perceived improvement, while orange texture indicates a perceived worsen of the element. “N” indicates that the interviewed declared to not have knowledge under that aspects or not enough information to answer the question related to the degree of change.

The table shown on the previous section it was employed in the last chapter (conclusion) as a mean to interpret patterns of data. As it can be seen from the data provided in table 7, the degree of change perceived resulted to be predominantly towards a perceived improvement. However, as it will be elaborated in Chapter 5, such change could not be associated entirely to the issuing of the FRMD. Table 7, should be used by the reader as an overview to refer to when reading the reporting section (4.4). The next section gives basics information on the interviewed, impressions and the modality with which interviews have been conducted. The questions asked to the civil servants interviewed were merged as a mean to aggregate data and comparing different answers.

4.4 Reporting

The heart of this section will move around a thorough description and synthesis of empirical results along with the literature review elaborated in Chapter 2.

It is relevant to remind that the approach deployed to gather interviews followed the snowball logic of selection of civil servants. However in a significant number of cases, it occurred that the snowball approach were ineffective as for five times actors indicated by civil servants interviewed stated that the topic of the investigation was not of their competences.

As it was mentioned earlier in this thesis, the transcripts were coded through the software Atlas.ti in order to extrapolate data from the questionnaires in a structured manner. According to the theoretical discourse built over Rotmans et al (2001) conceptualizations of multi-layer system exploited in this thesis there were interviewed regional and provincial offices. As it was mentioned in Chapter 3, National and Municipal levels of authorities were excluded from the investigation due to the theoretical composition of the conceptual model.

The interviews were carried out with four different organizations, for each firm it was interviewed at least a manager of the sector (In case of Regional offices there were interviewed two managers). The interviews took place in the civil servants' offices and there was not given prior time to read through the questions. A brief introduction of how the interview would have been carried out was given to each civil servant for approximately five minutes. Firstly it was asked to answer the questions posed (Appendix "A"), and to conclude the interview, it was asked to assign a number in relation to degree of change perceived in a scale from 1 to 7 (values are shown in table 7).

The following section reports the answers given by the participants; the words written in cursive are related to the dependent variables (TFRM) and were applied to the framework of questions in order to deploy a questionnaire valid only for the case study. When the theoretical framework wants to be used in other contexts the words in cursive will logically change accordingly to Member State legislations and governance forming layers.

Interviewed n°/ Role	Role and Organization	Relative appendix
1 / Managerial role	ARPAL	Appendix D
2 /Managerial role	Regione Liguria (UoM)	Appendix E
3 /Collaborator	Protezione Civile Regione	Appendix F
4 / Chief engineer	Regione Liguria (UoM)	Appendix G
5 / Engineer	Regione Liguria (UoM)	Appendix H
6 / Engineer	Regione Liguria (UoM)	Appendix I
7 / Spokesman	Protezione Civile Provincia	Appendix J

Table 6. Summary of civil servant interviewed with respective role and relative appendix in which transcripts can be found in original language. *UoM: Unit of management

Question 1 (Capacity to Resist). How government arrangements taken subsequently to the issuing of *Decree 49/2010* have been influencing the likelihood of flood hazards in Liguria?

The civil servant interviewed answered to the question in few different ways; The interviewed n°1 stated that there the likelihood of floods hazard has decreased due to enhanced collaboration among organizations, more considered investments in comparison to the past and the new tendency in investing towards prevention (theme covered in the FRMD). Moreover she emphasized a significant technological innovation *"...awareness has grown at many levels; legislative, territorial administration and scientific one..."*. However, she could not attribute directly the policy change to the implementation of the decree 49/2010. The interviewed n°2 stated that the decree had no influence over the likelihood of flood hazards, however, she further argued that a change in learning processes was being undertaken, agreeing consequently in part, with Interviewed n°1, *"...the main efforts made by Regione Liguria were over the learning processes..."*. Interviewed n°3 shared the previous observations on the enhanced learning processes and firmly stated that such change does not depends on the issuing of the Decree but it depends on the public authority necessity to cope with flood events. He contradicted instead the previous two by affirming that there has been a change in an increased likelihood of flood hazards, although he did not linked it explicitly to the policy change to the FRMD.

The interviewed n°4 confirmed the observation of the interviewed n°2 although she added that the Decree has given an added value to the method of reducing risks in comparison to the previous traditional approach *"...there should be further said that the Italian Decree has conferred an added value in respect to the previous planning process..."*. She further stated that the decree worked as a mean to reconcile organizations reliable for flood risk management. However she subsequently added *"at least it should have done it"* implying that the opportunity have not been fully exploited. She also further emphasized how according to her view, the national guidelines were not committed towards providing a more integrated approach to FRM. From policy document analysis it resulted unclear whether her observation was correct as regarding the law itself (Protezione Civile Report, 2015). While on the contrary from the content analysis of policy document PGRA 2015 her observation appeared to have rightful basis. The interviewed n°5 and n°6, members of the same organization, equally stated that there has not been evident change asserting that the TFRM approach was already thorough and that there was no need for change. The interviewed n°7 stated that the decree has had no direct influence upon his organization.

Question 2 (Capacity to Absorb and Recover). How, consequently to the *Decree 49/2010* the routine of flood risk management has changed? Have new management strategies influenced the traditional approach to flood risk management?

The interviewed n°1 stated that she perceived a change in the routine and in new management strategies, but she was not sure if it should have been related to the Decree itself; *"...I believe it was connected to the decree only partially, the worsening of the weather of the last years was a factor as well..."*. She found that nowadays more detailed regarding the mapping process and that a more structured approach in communication with the civil society is followed. She further added that this change in methods of gathering and delivering information it should significantly have influenced the flood risk management process, especially regarding the drawing of emergency plans; *"... this should influence FRM plans heavily. The major while constituting emergency plans indeed should base the planning process on critical tipping points that trigger the operational phases of reliable public institutions..."*. Document analysis has shown that 17% of the Municipalities in Liguria has not an emergency plan, although the rate is decreasing. The interviewed n°2 instead believed that the change in routine is due to the renewal of public administration (Legge 124/2015) and therefore does not associates the policy change with the issuing of the Decree.

The N°3 interviewed stated that he has seen a change on routine only in the method of employing different scale of evaluations that have been standardized due to national legislation. The change in routine therefore should not be associated with the issuing of the Decree. Cross checking investigation with policy documents (PAI, Modulario PC-PA n°60) confirmed that the Italian legislation had influence over the scale of evaluations independently from the FRMD.

The interviewed n° 4, concurred with the previous interviewed attributing the reasons for change to the renewal of the public administration rather than on the Decree. She further added that according to her perspective the Italian legislation on the matter was already efficient; *"...In the planning process nothing has changed because we had a FRM strategy that was already detailed and complete..."*. However she was the only interviewed that saw the Decree having influence over procedures to warn the civil society. Policy document analysis proved that such factor was embedded in the Decree 49/2010 (part II, point 2), suggesting on the contrary, that the Decree had an impact over the TFRM strategy. The interviewed n° 5, 6 and 7 stated that nothing on their perception were changed.

Question 3 (Capacity to Absorb and Recover). How the change in flood risk management policy influenced plans both on temporal and spatial scales consequently to *the Decree 49/2010*?

The interviewed n° 1 worked in an organization that has no technical competences on the matter therefore it was not asked this question. Interviewed n° 2 instead perceived a change and he showed controversial feelings towards the implementation of the Decree; The interviewed used terms as "the decree constrained, and decree forced us". The interviewed n°3 had not technical competences to be able to answer the question as the n°1. The interviewed n°4 believed that there were not perceivable changes contradicting therefore the observation of the n° 2 who worked in the same organization. However she added that a change is yet to be seen but expected *"...by now, there is no change at all because we drawn the FRM plan and it was approved in 2016, however there might be a significant change in the next one scheduled by 2018..."*. The interviewed n°5 concurred with the previous, while the interviewed n° 6 who had similar competences and role of the previous stated that he did not have knowledge on the matter. Lastly the interviewed n° 7 as the n°1 and n°3 stated that he had no technical competences to answer this question.

Question 4 (Capacity to Absorb and Recover). Have measures, projects or government arrangements undertaken subsequently *the Decree 49/2010* influenced the likelihood of flood consequences in Liguria?

The interviewed n° 1 stated that there has been a decrease of potential consequences due to improved systems of monitoring and more investments directed to the FRM strategy. However, she also criticized the frequency with which these investments are deployed. She further added that there is an enhanced collaboration among organizations reliable for FRM strategies although it was not clear whether she attributed this change to the issuing of the Decree. The interviewed n°3 referred to a change of procedure instead *"...a standardization of procedures started with the governmental project of Italia Sicura..."* (Independent from European legislations). The interviewed n°3 stated equally that government arrangements should not be considered as being responsible of the change. He added instead that past events influenced the degree of change hinting therefore to a change due to other type of inputs. The interviewed n° 4 declared accordingly to the previous two, that due to the increased awareness of the civil society in matters of flood events the risk is consequently diminished. However she partially associates the change to the issuing of the Directive, further asserting that the Directive/Decree gives an added value under the aspects of planning and protecting the civil society. The interviewed n° 5 and the 6th of the same organization instead did not perceived change at all.

The 7th interviewed stated instead that the potential consequences may have in his point of view diminished due to a different approach of risk evaluation “...In the Decree are established the risk evaluations that in turn influenced the drawing of FRM plans...”.

Question 5 (Capacity to Absorb and Recover). How roles of institutions on territorial and social recovery (in case of floods) have changed subsequently *the Decree 49/2010 in Liguria*?

To this question, five out of the seven interviewed could not answer to the question as they stated they had no knowledge on the matter, both two who gave answer (both working in the Regional authority offices, 4 and 5) believed that the roles have not been changed. On the contrary, policy document analysis revealed that only institutions overall competences have changed in consequence of the renewal of public administration (Legge 124/2015). The interviewed n°4 stated that there the shift of competences among firms created unclarity over the roles of institutions reliable for FRM policies. The interviewed n° 5 limited himself to the statement that maybe the change is yet to be seen although it is expected “.

Question 6 (Capacity to Adapt) How formal arrangements that influence the learning process of institutions have impacted this organization in consequence to *the Decree 49/2010*?

Interviewed n°1 stated that the learning process of the institutions have had always an efficient procedural framework. She also attributes such merit with being obliged from National authorities to review and refine constantly their procedures independently from the decree. She also added that an external institution that takes over the role of monitoring has been thought in collaboration with other institutions although it has not been realized yet. However such institution would not be connected to the Decree. The interviewed n°2 stated that the Decree had a minimum influence over the process of learning for the organization. He believed that the traditional flood risk management approach was already efficient in terms of learning processes. However he later contradicted himself asserting that the Directive gave a significant impulse to the improving to the learning processes.

Interviewed n°3 stated instead that the learning processes have not changed even though the firm perspective is changing. According to her statements they have improved the learning processes over potential hydraulic danger. Such change is due to a shift in competences consequently to the merging of organizations and human resources in relation to the renewal of public administration (Legge 124/2015). In her point of view also, there is more coordination among the institutions that are reliable for FRM policies although the statement was not explicitly linked to the issuing of the Decree. She also believed that the change regarding learning processes is there but the extent of change is not quantifiable yet. “*the renewal of the public administration is ongoing so perhaps I could better answer your question in a year time*”.

The interviewed n° 5 (Regional authority offices) believed instead that there has been a change in the learning process. He attributed such change to the a renewed procedure employed for mapping and zoning. The interviewed n° 6 abstained himself from answering the question while the n°7 believed that nothing has changed on the matter.

Question 7 (Capacity to Adapt) How room for innovation and experimentation has increased consequently the issuing of the Decree 49/2010?

The Interviewed n° 1 stated that there has been a change in distribution of space for experimentation regarding the instrumental monitoring, and the support network of such. She also stated that there have been changes under the aspects of communication although there is a lack of human resources to

significantly improve the quality of these new procedures. She also believed that the Decree did not sufficiently cover the theme of communication between authorities and civil society, aspect that, in her point of view, should be a priority. The interviewed n° 2 did not see any type of change in room for innovation and experimentation. The interviewed n°3 stated that they are moving towards an experimentation in collaboration with ARPAL confirming the point of view of the interviewed n°1, although she added that the radical change to be related to the Decree is yet to be seen. Interview n° 4 believed that in the PGRA it was included an increase of room for innovative projects. However she also believed that the PGRA does not deliver incentives as it has a function of guideline. This observation results unclear whether rightful or not, from the reviewing of the policy document relative to the PGRA and the Decree itself which state

“The Flood risk Directive and the transposed law d.lgs 49/2010 establishes that the PGRA should work as a mean to coordinate the aspects of territorial planning and civil protection as both sides are necessary and complementary for the correct function of flood risk “.

She also stated that there have been undertaken new technical measures consequently the PGRA on new techniques for fluvial recovery which are a direct consequence of the decree. Furthermore she stated that there has been a change on investments although she relates it to endogenous institutional inputs stimulated by exceptional damaging past events. The remaining 3 interviewed (two on regional offices and one on provincial civil protection) did not give answer.

Question 8 (Capacity to Adapt) How did the review proceedings relative to incorporate new information about future potential risks (e.g. climate change influence) have changed subsequently to *the Decree 49/2010* in the *TFRM approach*?

The interviewed n°1 stated that when the proceedings have changed, they did it consequently to an enhanced awareness of the civil society of flood risks therefore the element of change should be attributed to a societal change. However she clearly associates the change in procedures for accounting for potential risks to institutional inputs apart from the issuing of the FRMD *“...the main cause of change in my point of view is to be related to the increase of flood events and the parallel abuse of the territory with wild urbanization...”*. She also believes that the increased awareness derives only partially from normative impulses. Interviewed n°2 believes that Italy under this point of view has had an advantage due to the *“already”* efficient TFRM approach which thoroughly accounted for potential future risks within the planning process. The interview n° 4 stated that changes in procedures occurred retrospectively; *“Accounting for potential future risks is a consequence of the occurring of flood events and change in proceedings occurred to face such issues independently from the Decree”*.

The interviewed n°5 instead stated that the planning process has changed consequently to the PGRA. The PGRA is dependent from the Decree (D.lgs 49/2010) and as such it can be considered of influence over the change in accounting future risks. However she also affirmed that the TFRM approach was efficient in accounting for future risks. She also stated that the situation is changing although she did not elaborate any further. The interviewed n°5 of the same organization believed that there has been a change in the procedures of accounting for future risks and he attributes the change to the replaced method of evaluation of risks. However he also stated that on his perspective the new indication of risk that it should be taken into account is not clear on how it should be evaluated *“...at this moment, in the planning process, concerning flood risk evaluations, are taken into account indications that relate to the potential increase of risks although it is not clear yet how to evaluate it...”*. The interviewed n°6 who has a similar role in the organization did not perceived significant change in the procedures for accounting risks. The interviewed n°7 did not answer to the question as he stated that the topic questioned was not of his competence.

Question 9 (Resources Efficiency) How the deployment of resources (financial and human) has changed consequently the issuing of *Decree 49/2010* in this organization?

The interviewed n°1 stated that there has been an improved efficiency in resource expenditure although the real problem consisted in not having significant resources (human and financial) to invest. The interviewed n°2 agreed with the first interviewed although it was not clear whether he attributed the change of deployment of resources to the Directive or to the renewal of the public administration. The interviewed n° 3 agreed with the first stating that there have never been resources and she explicitly linked the change in the frequency of investments to the impact of past events and the consequently increased awareness of territorial vulnerabilities “...the resources arrived because of a series of damaging flood events occurred in short period of time, which in turn triggered the reaction from the authorities...”. The interviewed n°5, 6 and 7 did not perceived any type of change in the matter.

Question 10 (Resources efficiency) How the *TFRM* approach has changed in terms of integrated approaches consequently to the *Decree 49/2010*? (e.g FRM measures that reduce the need for multiple schemes at added costs)

The interviewed n° 1 associated the enhanced integration with an enhanced collaboration among organizations. She also stated that the European normative has been exploited as an opportunity to renew such collaboration “...The European normative has provided a fair opportunity for integration of the public administration...”. The interviewed n° 2 stated that there has not been great change consequently to the decree because TFRM approach was already advanced in terms of integrated approaches. The interviewed n° 3 agreed with the previous stating that he did not perceived significant change. The interviewed n°4 believed that the change occurred in the past years has to be related to the public administration renewal (Legge 124/2015) more than the Decree itself. The 5th interviewed who works in regional offices asserted that the approach is sectorial and not integrated at all, although he does not further elaborate on the matter. The interviewed n°6 answered doubtfully hinting to a likely change towards integration although as for the previous, he did not elaborate the answer fully. The last two interviewed n° 6 and n° 7 abstained to answer the question.

Question 11 (Clarity and Consistence) How, consequently to the *Decree 49/2010* has the efficiency of the decision-making process relative to the *TFRM* approach changed?

The interviewed n° 1 stated that a change is ongoing and due to the occurring of flood events more than to the decree “...this is an evolutionary process that sadly moves on in parallel to flood events which accelerate the process of change...”. She also stated that there is a more comprehensive procedure over the decision-making process in respect to the inefficient previous one. The interviewed n° 3 defined the ongoing policy change negatively; a “mistake” made by governmental institutions responsible for drawing the renewal of the public administration (Legge 125/2015). The interviewed n° 3 has had no comment on the question asserting that had no knowledge on the matter. The interviewed n° 4: a civil servant working in regional offices did not have knowledge of occurred change, while the 5th and the 6th 7th believed nothing has changed.

Question 12 (Decision Rules by Implementing Agencies) How has the interest of this organization towards the pursue of normative aims, been changed consequently the *Decree 49/2010* in Liguria?

This question was skipped for the interviewed n°1 due to time constraints. The interviewed n°2 stated that there has been a change to be associated to the renewal of public administration (Legge 124/2015). He further expressed his frustration on the matter “...*this renewal were not thoroughly prepared...*” He attributed the change of the firm interest in pursuing normative aims on the shift of public institutions decisional powers. The interviewed n°3 instead stated that the “situation” has changed although he does not connect it with the interests of the organization nor with the issuing of the Decree. The interviewed n°4 did not perceive change although she does not further elaborate the answer. The interviewed n°5 and 6 did not have knowledge in the matter while the interviewed n° 7 agreed entirely with interviewed n°2.

Question 13 (Hierarchical Integration within and among Implementing Organizations) How have the roles of implementing agencies changed consequently *the Decree 49/2010*?

Only two interviewed answered to this question. It is relevant to mention that this question was posed among the last ones and some interviewed could have lost interest or focus. The interviewed n° 1 believed that there has been a significant change in roles of implementing agencies as there were embedded new aspects in the TFRM strategy (no more only “prevention” to consider). According to his perspective the Directive requires to establish operational phases delivering therefore enhanced benefits to the TFRM approach. The interviewed n°2 agreed with the interviewed n°1 and he further emphasized how the roles of implementing agencies become more complicated to manage due to the widened scope of the FRM; the managing of operational phases represents according to interviewed n°2 a complication of the roles of the implementing agencies.

Question 14 (Hierarchical Integration within and Among implementing Agencies) How has the number of sanctions relative to the obtainment of the normative objectives changed consequently *the Decree 49/2010*?

The answer to this question was alike for all the interviewed but one, the interviewed n°2. It is relevant to mention however that n° 1 highlighted a lack of monitoring (and system of sanctions) on the compliance of municipalities with the constitutions of emergency plans. The majority of the interviewed were not aware of any sanctions from higher level of governance, while the interviewed n° 2 described a process that is not based on sanctions but rather is based on rewards. He further added that the Decree allowed institutions to benefit from incentives “...*The Decree works along with giving incentives to institutions that puts efforts in what they doing, penalizing in turn, others...*”.

Question 15 (Clarity and Consistence) How, consequently to the *Decree 49/2010* has the capability of this institution of reaching normative objectives, been affected?

The interviewed n°1 stated that more than the institution’s capabilities, the Decree has influenced on enhancing the awareness on the territorial vulnerability to floods. The interviewed n°2 stated that the foundation of the institution “Italia Sicura” (National authority) has significantly influenced the capabilities of each institution involved with flood risk management as it gave great support in reaching normative goals. The interviewed n°3 stated that the decree influenced the institutions capabilities because of slightly divergent normative objective in comparison to those relative to the TFRM approach. “...*yes, they were influenced because the regional authorities are obliged to comply with national normative, direction taken by this firm...*”.

The interviewed n° 4 instead, believed that the Decree has had an influence due to changes that have brought to the traditional way of acting, using words to describe decree's influence as "constriction and forced", "...there has to be said that the Directive has forced us to put together all the data. It forced us to see for instance the *Parte Padana (Northern part)* with maps of synthesis that we did not have before. It obliged us to evaluate risk with a single procedure..". The interviewed n°5 and the 6th has shown himself unsure on the matter and consequently he did not give answer. The interviewed n° 7 accordingly to the n°3, perceived a significant improvement made by other organizations reliable for FRM approach and therefore he believed that the capabilities of the institutions were improved.

Question 16 (Accessibility from Outsiders) How has the accessibility for actors outside the process of elaboration of flood risk management plans been changed consequently *the Decree 49/2010*?

The interviewed n°1 stated that there has been a significant change in terms of accessibility although she could not link the change directly to the Decree "...since 2010 a lot has changed, however I can infer that both, the decree and the occurring of flood events, influenced the process in this case...".

The interviewed n°2 stated that perceived little change in the process of involvement of outsiders, he further added that the TFRM approach had already a consistent plan to involve external professional actors. He further added the process of involving civil society instead was always given to the single municipalities. The interviewed n° 3 stated that there has not been any change at all on her point of view. The interviewed n° 4 asserted that they have been stimulated from higher authorities to improve the publishing process, however, not much has changed "...I believe that this thing has improved although maybe is more formal than substantial...". She further added that the external actors are used to traditional way of publishing and therefore the attempt to improve the accessibility has had no great effects because external subjects continue to refer to traditional maps, offices, and locations. The interviewed n°5 shared the point of view of the interviewed n° 4 while the interviewed n° 6 did not answer to the question affirming that had no knowledge on the matter. The last interviewed n°7, declared that new relationship with outside organizations are rising and a clear example of this is CIMA foundation. However, document policy analysis showed that CIMA foundation was born in 2007 and the Decree that transposed the FRMD was issued in 2010.

Question 17 (Adaptability of the Policy) How the Decree 49/2010 has influenced the organization reliable for its adaptation towards the pursue of normative aims?

The interviewed n°1 stated that the adaptation of the institutions has changed only partially. She further added that the capacity of adaptation of the institution is dependent from the frequency and quickness with which a flood event occurs and it is not due to normative changes. In other words, whether she perceives a change or not in capacity of adaptation of the institution she would not consider it as being dependent from the Decree. The interviewed n° 2 stated that no changes have to be seen regarding the adaptation of the firm. She further added that there is no need to improve adaptation as the TFRM approach is thoroughly efficient. The interviewed later contradicted himself by saying that the decree has marginally influenced the adaptation of the institution although he did not elaborate his motives. The interviewed n°3 did not answer the question asserting that was not of her competence to have knowledge that topic. The interviewed n° 4 stated that whether there has been change in the capacity of adaptation of the firm to pursue normative aims, is due to the renewal of public administration. He further added that there is often a lack of clarity on competences and overlapping of roles caused by the same reform "...Sometimes the civil servants collaboration within the firm is still difficult due to renewal of the public administration. The unification of public offices brought fuzziness, sometimes for example you cannot

understand where somebody competence starts and where it ends. Moreover now that the competences have been levelled, it is difficult to have always a consensual decision making process.". The remaining civil servants did not give answer to the question as they stated have no knowledge on which they could have based their observations.

4.5 Compare and contrast the empirical findings

In order to compare the research findings to the theoretical framework elaborated in Chapter 2, the transcriptions of the interviews carried out among the institutions listed earlier in Table 6 (ARPAL, Protezione Civile Regionale, Protezione Civile Provinciale, Regione) were coded in Atlas.ti. The information were triangulated with policy documents indicated by civil servants and recovered from reports of the consultancy firms that play a role in the Italian FRM policy. Many of theoretical concepts and logic discussed in Chapter 2, could be linked to the empirical findings. In the following section, with bold characters, are depicted the main concepts elaborated in Chapter 2 (Theoretical Framework) that were useful as a mean to analyze the empirical findings.

- **The implementation of Flood Risk Management Directive was associated to an incremental policy change** In Chapter 2 it was argued that the policy change investigated in should be considered as been incremental (Lindblom's, 1959) rather than radical. The differentiation between the two type of change was employed as a mean to direct the research; it was argued that identifying the elements of incremental change could favorite the proposition of feasible strategies to overcome unexpected impacts.

The assumption that the type of change investigated was incremental was confirmed by the Data gathered that showed that the normative difference between the FRMD and the TFRM strategy were not dramatic. However it was also highlighted that the assumption made on the type of change being dependent from the FRMD was not justified. The incremental evolving of the policy could have been related to the issuing of the previous directive on water policies (WFD 2000/EC/60).

Civil servants often described the FRM strategy as being already efficient and with no need for change. They also referred to legislation that were issued consequently the WFD 2000/EC/60. These observations cross checked with policy documents relative to the Decree (D.lgs 49/2010, L124/2015, PGRA 205) debunked the research hypothesis on which the feature of incremental change was based on. From the coding process of the interview transcripts it resulted clearly that the Decree itself did not bring a significant change into the TFRM. On the contrary the conceptual model unrevealed a significant policy change in the TFRM strategy in relation to the year 2010.

- **Institutional inertia, or institution that are reticent to change towards new paradigms** (Harries, 2011). These concepts could be thoroughly linked to the field research although it is open to interpretations. Several times, based on answers and attitude of the interviewed it could be noticed how the efficiency of the TFRM approach was emphasized in relation to the Decree. There were many contradictions among the interviewed on how the Decree influenced different elements of the TFRM approach. The coding process highlighted how several times the interviewed asserted that TFRM had no need for change because already efficient although they were later contradicting themselves by stating that the FRMD improved elements of the TFRM approach. Furthermore interviewed n° 4 believed that the Decree was something to comply with more than an opportunity of change; it can be therefore assumed that the institutional reticence to change

played a role in the implementation of the Directive although it cannot be understood the extent of its influence.

However it is also relevant to mention that the reticence of the institutions to change could vary along time; often the interviewed, stated that change in the TFRM approach, in relation to various criteria of the framework *“it was not yet seen but expected”*.

- **Conceptualizations of Micro, Meso and Macro Levels.** In Chapter 2 It was emphasized that in this thesis the Meso level was conceived, according to Geels (2002) and Rotmans et al(2001)' point of view, as being a conglomerate of institutions. As such the research focused on the institutions that were rightfully in charge of FRM policies. The investigation had, as a starting point, the Unit of Management appointed by Italy consequently to the WFD 2000/60/EC. Furthermore, as it was described earlier, other three public organizations resulted to be of relevance in the TFRM strategy (Protezione civile Provincia, Protezione Civile Regione, Arpal). The data gathered in the interviews showed how several times the civil servants associated the changed elements in the TFRM policies, to a societal change rather than associating it to institutional inputs. Such Data further confirmed the influences that the Macro level (elements that change with a slow dynamism as cultural changes or macro economy changes) has had on the institutions in the Meso level. The societal change mentioned earlier, was associated by all the interviewed to an increased awareness of the society towards the risks and potential consequence of flood events. This indicates therefore influences that are exogenous to the meso level, giving credit therefore to Rotmans et al. (2001)' conceptualizations on multi-layered systems; the influences of Macro level have effect on the Meso level. Furthermore the data gathered could be compared with Meijerink and Dicke (2008)' work, and confirm the changing trend of the FRM policies towards integrated approaches. Furthermore the Italian TFRM strategy enforced the influences that the meso level has on the macro level by raising social awareness in terms of flood risks and what to do in case of flood, contributing in turn to the transition of the societal change.
- **Policy Divergence.** According to Carter et al (2015), moreover it can be inferred how the low degree of divergence from DFRM to TFRM approaches impacted the institutional setting. The overall change caused to the TFRM approach by the Directive, accordingly to policy documents and interviews, was partial and incremental. This most likely indicates that the hard policy elements (Kortelainen et al., 2016) negotiated by the Italy remained similar to the TFRM policy. Such observation can be further confirmed only with reports issued by the European Commission on the correct transposition of the Directive itself (which has to be issued in final instance in consequence to other three stage of implementation deadlines in 2018, 2019 and 2021).
- **Flood risk governance evaluation and Degree of change.** By coupling these two frameworks to the method of assessing policy divergence it was possible to identify change in TFMR in relation to inputs that derived from the FRMD. Furthermore by gathering information about the degree of change perceived it was possible to make statements that link the transposition of the FRMD to Rotmans et al (2001)' conceptualization of multi-layered systems and their behavior.

4.6 Synthesis of findings

Through the coding process of transcripts and a content analysis of most relevant policy documents (selected accordingly to civil servant statements) a few elements of contrast seem to highlight repetitive patterns. Two types of change have been defined; The first is dependent on a normative inputs, and it is related to the Dependent variable (TFRM) the Independent variable (FRMD) and the Meso-level. The second is related only to the Dependent variable and the Macro level, because responsible for changing elements of the TFRM independently from normative inputs.

The most recurrent codes that were to be associated to normative type of change eventually were:

MESO LEVEL. To be related to the Independent variable "FRMD"

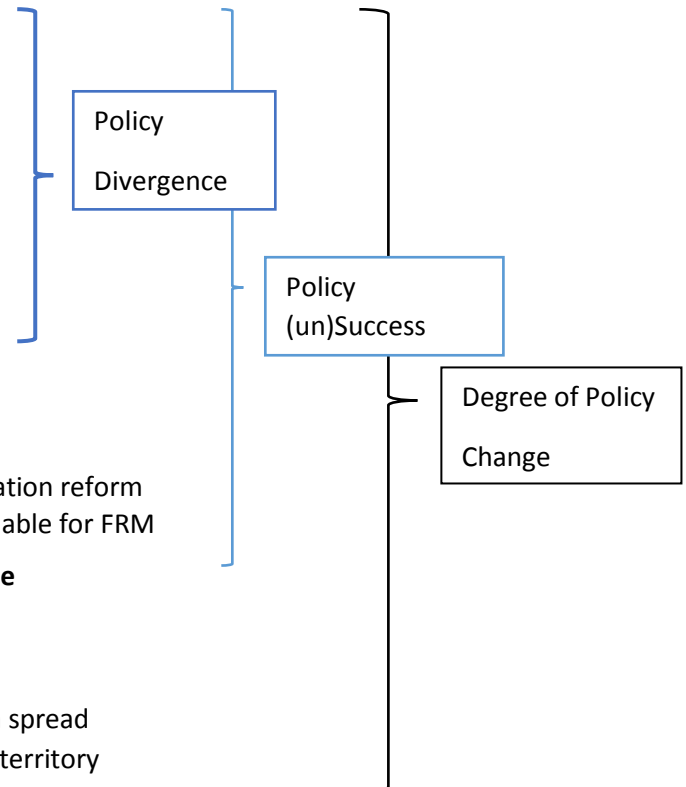
- Change among institutions behavior in terms of Collaboration
- Improved learning processes
- Unknown sanctions or monitoring programs carried out from higher level of governance

MESO LEVEL: To be related to the dependent variable "TFRM- Liguria"

- Change dependent by internal Public administration reform
- Lack of communication among civil servants reliable for FRM

MACRO LEVEL or MICRO LEVEL. To be not related to the dependent variable "TFRM"

- Higher risks due to climate change
- Higher risks due to previous uncontrolled urban spread
- Higher risks due to the high vulnerability of the territory



Other codes that should be mentioned although they did not constitute a recurrent pattern were on mixed feelings towards the Directive (Unclear whether it should have been associated to National level or European level), lack of resources, and procedural changes. These recurrent codes seem to be the cause of changing point of views of the civil society towards both the public institutions and the flood hazard itself. Table 7 at the beginning of the Chapter depicts a change in respect to the year of the issuing of the Decree (2010) however during the interviews the effective influence of the Decree over the local institutions appeared to be only partial.

To give order in a structured manner to data, accordingly to the theoretical links made in Chapter 2 these codes are described in relation to their domain of existence (Macro, Meso and Micro level) accordingly to the theoretical framework developed in this thesis. Macro or Micro level influences over the Meso level can be regarded as exogenous forces over the patchwork of regimes (Geels, 2002). Rotmans et al.(2001). Empirical results (codes) showed that the elements of change investigated could be related to the conceptualizations of multi-layer systems and they could be further related to layers mutual influences on each other. Even though it is open to interpretation, a few elements (depicted above in the bullet points) were associated to the layers to which they are dependent on and vice versa.

CHAPTER 5

5 Conclusions

The thesis is an exploratory research that aimed to uncover impacts that FRMD/60/2007 had on local institutional setting through an investigation that was undertaken using an exploratory case study as research strategy. The elaboration of such investigation was justified with the hypothesis that the implementation of a coercive policy change (Dolowitz and Marsh, 1996) could have a negative impact on the TFRM policies.

The hypothesis was based on the assumption that a functioning TFRM strategy could have had repercussions from the implementation of an outsider normative input. The normative change was issued by the European Commission in the attempt to improve TFRM Member States policies (European Commission, 2016). The primary research question of the investigation based on the research hypothesis was:

“What is the impact of the Flood risk management Directive on the Italian traditional Flood management policies?”

In the attempt to answer to the main research question, the same was further de-structured in sub-questions that were related to literature review as a mean to create the conceptual model.

How do I evaluate the change of traditional flood risk management approaches in relation to the transposition of the Flood Risk Management Directive 2007/60/EC? How do I evaluate the impacts that the transposition had over the Traditional flood risk management approach?

The first sub-question supported the theoretical elaboration on what constitutes policy change, which type of policy change exists within the academic community, and it allowed to exploit the concept of policy divergence (Carter et al, 2015) as a mean to compare TFRM and FRMD. The criteria to assess policy divergence were based on changes in policies throughout time on in relation to the issuing of the FRMD. The second sub-question instead allowed to exploit theories on policy success as a mean to evaluate policy impacts in TFRM approaches. The secondary part of the framework based on assessing policy success, as argued in Chapter 2, was based on policy change throughout time in relation to the TFRM.

On one hand, the effects that the entering of a new policy could have had on institutional settings was analysed by evaluating the degree of success of flood governance and policy change in relation to the FRMD, while on the other, the perceived degree of change of TFRM was measured in relation to the same year (2010) of the issuing of the new policy.

The research question was constructed in a way that presented an Independent and a dependent variable as a mean to make sense and structure empirical data gathered.

“What is the impact of the FRMD on the Italian TFRM?”

Independent variable

Dependent variable

By coding the transcripts of the interviews carried out with civil servants of four relevant public organizations (Table 6) it was possible to link the degree of change studied in this investigation to the dependent and independent variable. Table 8 presents the elaboration of data based on degree of change perceived in FRM strategies in relation to year 2010 in relation to the impacts of the FRMD over the TFRM.

Degree of change (1-7) related to the respective Criteria	Interviewed 1	Interviewed 2	Interviewed 3	Interviewed 4	Interviewed 5	Interviewed 6	Interviewed 7
Likelihood of flood hazard Capacity to resist	4	2-3	1-2	1	2	3	4
Potential consequences related to flood events Capacity to absorb and recover	6	2	1-2	1	3	3	1
Routine TFRM approach Capacity to absorb and recover	N	4	N	1	1	4	5
Plan designs and timing of interventions Capacity to absorb and recover	6	1	N	1	N	N	N
Roles on socio-territorial recovery Capacity to absorb and recover	2	2	N	2	2	N	5
Organization learning process Capacity to adapt	3	2	N	3	1	4	2
Accounting for future risks Capacity to adapt	5	5	2	5	4	N	4

Room dedicated to experimentation projects Capacity to adapt	2	2	N	N	N	4	5
Reviews timing Capacity to adapt	1	1	N	N	N	N	N
Resources expenditure Resources efficiency	6	1	1	1	1	5	5
Integration of projects and/or intervention Resources efficiency	1	1	N	4	N	4	5
Decision making process efficiency Clarity and Consistence	2	1	N	1	N	5	5
Capability of reaching Normative objectives Decision rules by implementing agencies	6	3	N	1	N	4	2
Interests in reaching Normative objectives Clarity and consistence	2	2	N	1	N	6	N
Roles on implementation of interventions Hierarchical integration within and among implementing organizations	1	1	N	1	1	4	5

Controls and sanctions Hierarchical integration within and among implementing organizations	4	3	N	N	N	N	1
Accessibility to outsiders Formal access by outsiders	1	4	N	1	2	4	4
Adaptability to change to reach normative objectives Adaptability of the policy	6	3	N	N	N	N	4

Table 8. Graphic overview of the empirical findings; The criteria of the theoretical framework are listed in relation to the element of change. The texture light blue indicates that the Criteria has changed in under the influence of the FRMD.

The evaluation framework built in theory (Table 5) related to the year of issuing of the FRMD was able to gather structured Data over the changes in resilience and efficiency over the flood risk management governance (Accordingly to Alexander et al. (2016) revised methodology. The deployment of such framework gathered moreover data upon the policy divergence (Carter et al, 2015) in relation to a previous stage of a policy on one hand and in relation to the FRMD on the other. The conceptual model proposed in Figure 2 (illustrative representation of Table 5), was able to collect data in relation to endogenous and exogenous inputs over the meso level through the deployment of such in relation to one point in time first (2010), and later in relation to the FRMD.

- Policy change in relation to 2010 (Degree of policy change) → Meso Level changed due to Macro/Meso or Micro layers changes.
- Policy change in relation to FRMD (Policy divergence and FRM governance evaluation) → Meso level changed due to changes within the Meso level

The policy change in relation to both 2010 and FRMD issuing were investigated through the deployment of the framework of evaluation (Table 5). By combining results of the first and the second relation. It can be seen in Table 8 how the transition towards an improved FRM approach occurred since 2010. However the significant difference between the two indicated that although a change in the flood risk management approach occurred, it was in a minimum part to be associated with the issuing of the Directive. The hypothesis posed at the beginning of the research on a possible drawback that could derive from the implementation of the Directive in local institutional settings did not find clear evidences to support it, however the investigation highlighted how institutional inertia influenced the willingness of institutions to be shaped from an outsider governmental authorities (Harries, 2011).

Although it can be seen the influence of FRMD over the TFRM in the criteria “Decision rules by implementing agencies” and “capacity to adapt”, that is described by the Data as a change in learning process of institutions and a significant change in terms of collaboration, a relevant data that should be also highlighted was paradoxically on the unknown sanctions given from National level to lower level of governance. The data suggests that the lack of monitoring by National and Regional authorities over the process of transposition of the FRMD did not provided incentives for institutions for exploiting the windows of opportunity provided by the FRMD. The interviewed n°4 emphasized that there is a lack of willing from the institutions reliable for FRM policies to “do more” or exploit the windows of opportunity that the FRMD constituted. Furthermore Interviewed n°1 emphasized the lack of monitoring also on the local level were, according to the Italian legislation, each municipalities should have the emergency plan. According to interviewed n° 1 these plans sometimes “are not even there” and there are not Regional nor National monitoring programmes on the matter. The observation was cross-checked with the policy document analysis and, accordingly with the governmental website of Civil protection, 17 per cent of emergency plans in the municipalities of Liguria Region are missing (Protezione Civile 2016). Although this shortcoming should be attributed to the TFRM rather than to the implementation of the directive I argue that when a monitoring programme over the transposition of the FRMD was in place, there could have been room in this case to exploit the windows of opportunity of the FRMD.

Furthermore, the European Directive provided guideline on four main themes that the Member States had to comply with: (1) Providing evaluation of flood risks reports, (2) Drawing maps of risks, (3) Involve the civil society in the process of complying with the previous two points and (4) Drawing Flood management risk management plans. Empirical findings showed that Italian regional authorities (UoM) did not fully exploited the windows of opportunity provided by the FRMD to involve the civil society in the process of drawing FRM strategies. On the other hand, data gathered indicate that European authorities did not provided sufficient incentives to exploit such opportunity.

Moreover, the renewal of public administration (legge 124/2015) further centralized the power of public administrations, depriving municipalities of administrative powers. According to the empirical findings, it seems that the reform of the public administration weakened significantly the TFRM. The unexploited potential of the FRMD therefore could be also associated to an internal change that undermined the TFRM. It would be logical to assert that when the re-organization of the public administration would have not occurred, the FRMD could have had different impacts over the TFRM strategies. The application of the conceptual model in practice therefore was able to distinguish successfully different sources of influences over the policy change.

Furthermore, according to civil servants interviewed and to the European Commission report evaluation published in 2016 the renewal of public administration could be associated to a direct consequence of European commission requests “*Member states are encouraged to guarantee investment-friendly environment, removing institutional barriers and to strengthen the single market, identifying a stable reserve of projects and insuring coordination and robust planning in the public administration*”. This could indicate a previous institutional inputs given to the Italian legislation that in turn affected the transposition of the FRMD.

Regarding the Ligurian case study, the recommendation is to form an institution reliable for monitoring the policy implementation of European institutional instruments. By enhancing the process of monitoring, the National authorities and the European Union would have to keep an updated report on the process of transposition. The constant updating would allow in turn to make the policy change adaptable to the conditions that the environment presents (e.g. public administration renewal, financial crisis). The logic behind an additional institutions that controls over the transposition of Directives is based on the

assumption that EU would give tailor-made incentives to Member States accordingly to their specific issues. The final recommendation therefore is to enhance the communication between the various institutional layers in such a way that when issues come at hand, a prompt reaction from higher layers of governance can be triggered in support.

Although the hypothesis of potential negative impacts over TFRM approaches in relation to the implementation of the Directive was debunked along the investigation, an unexploited potential from the local institutions was highlighted several times by the interviewed. Table 8 are shown data that describes how the effects of the transposition of the FRMD were “positive” as they improved learning processes and collaborations among institutions reliable for FRM strategies.

The change that took place in the TFRM, according to data gathered was to be attributed majorly to a cultural change. It resulted that in this case study, the European Commission could not incentivize sufficiently the Italian government to fully exploit the opportunities presented with issuing of the Directive. Such flaw justified the recommendations proposed in this thesis. Furthermore, such enforcement of the communicative process between institutions could be also exploited as a mean to increase integration between all level of governance.

5.1 Final remarks and critical reflection on conducting research

Even though the hypothesis was debunked as there were not clear evidence of negative impacts in relation to the empirical findings, the conceptual model proposed in the theoretical framework constitutes in my point of view a valid method of collecting and structuring data. The framework proposed built on the shadow of the conceptual model depicted in Chapter 2 resulted to be a valid method that can be re-employed by scholars in order to conduct research over Member States FRMD impacts over their TFRM strategy settings. The tool provided in this research, contributed to theory through the combining and refining of existing theories, while on the practical point of view has provided a mean to undertake investigation for both Member States and European authorities when they want to understand the influence of the FRMD over their institutional settings.

However the research was not deprived from issues related to the field data gathering. The first among many issues at this stage were on holding contacts with civil servants that work in the public firms. Although it is not clear whether meetings with civil servants were difficult to schedule due to the recent public administration renewal or by a persistent problem of lack of accessibility, the poor trackability of such required a larger span of time to conclude research. Moreover, the ineffectiveness (at times) of the snowball approach to select civil servants to interview required additional time to conclude research. During the field research there were situations when although meetings were settled they were cancelled once that the interviewed read all the questions of the questionnaire. Perhaps a method to increase the speed of investigation could include to inform potential interviewed with a more thorough explanation of the topic at hand.

On the other hand, overall, data seemed to be convincing as it could be distinguished the process of policy change dependent from mechanisms internal to Member States (which appeared to be significant) and on the other hand to evaluate successfully the influence of the European institutional instrument over Italian TFRM strategy.

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Appendices

Appendix “A” Chapter 3

Interview form submitted to Civil servants. On the left column are the questions correspondent to each element of evaluation. On the right column is shown the relative question that asks to assign a value to the degree of change of each criterion (consequently to the issuing of D. Lgs n°49 2010).

Have government arrangements that influence the likelihood of flood hazard, be undertaken subsequently to 2010 in Liguria?	Give a weight to the changed likelihood of flood hazard due to the influence of government arrangements subsequently to the D.Lgs 2010 in Liguria.
Have new flood risk management strategies entered the traditional institutional routine subsequently to the D.lgs 2010 as far concerns Liguria flood risk management policies?	Give a weight to the degree of change of institutional routine relative to new FRM strategies subsequently to D.Lgs 2010. In Liguria.
How the change in flood risk management policy influenced plans on both temporal and spatial scales subsequently to the D.lgs of 2010 in Liguria?	Give a weight. To what extent change in FRM influenced plans on temporal and spatial scales subsequently to D.Lgs 2010?
Have measures, projects or government arrangements undertaken subsequently to 2010 influenced the likelihood of flood consequences in Liguria?	Give a weight. To what extent measures, projects or government arrangements deployed subsequently the D. Lgs 2010, influenced the likelihood of flood consequences?
Have roles of institutions on territorial and social recovery changed subsequently to 2010?	Give a weight on the level of change relative to the change of roles of institutions in social recovery consequently to the D.Lgs.
Have formal arrangements that favourite the learning process of institutions been adopted subsequently to 2010?	What is the degree of change of arrangements that favourite the learning process of institutions subsequently to the D.Lgs?
Has room for innovation and experimentation, increased subsequently to 2010? How	What is the extent of change of room left from the Regione Liguria to innovation and experimentation?
Have timings of periodic review proceedings relative to incorporate new information about climate change and floods, changed, subsequently to the D.Lgs 2010? How?	To what extent is the timing of periodic review proceedings relative to incorporate new information about climate change, changed?
Have there been significant changes in flood risk management in the process of accounting future risks and certainty, subsequently to 2010? How?	What is the degree of change as regards the FRM in relation to the process of accounting future risks subsequently to the D.Lgs 2010?
Is the flood risk governance arrangement or sub-entities of governance using resources in an efficient manner subsequently to the notification of D.lgs n°49/2010?	What is the extent of change in efficiency of resources expenditure subsequently the D.Lgs 2010?
Are FRM measures delivering increased benefits (thus reducing the need for multiple schemes and/ or projects at added costs) subsequently to the issuing of D.lgs 2010?	What is the extent of change in benefits due to FRM measure in terms of integrated approaches?
Has the efficiency of the legal framework and the overall process of decision making and delivered activities changed subsequently the implementation of D.lgs 2010?	What is the extent of change in the efficiency of the overall process of decision making and delivered activities subsequently to the 2010?
To what extent is the D. lgs n° 49/2010 and regional implementation laws, consistent with obtaining policy goals dictated by the FRM 2007/60/EC?	To what extent is the D. lgs n° 49/2010 and regional implementation laws, consistent with obtaining policy goals dictated by the FRM 2007/60/EC?
To what extent is the mission of implementing agency congruent with the policy's objective dictated by the FRM 2007/60/EC?	To what extent is the mission of implementing agency congruent with the policy's objective dictated by the FRM 2007/60/EC?
Did implementing agencies have changed roles and/or competences subsequently to the D.lgs 2010?	To what extent roles and competences have changed subsequently the D.Lsg 2010?
Were there adequate sanctions to ensure compliance earlier to the implementation of D.lgs 2010?	To what extent sanctions to ensure compliance of the implementation of D.lgs 2010 have changed?
Have adequate directives for monitoring and enforcement instruments been implemented subsequently to the issuing of D. lgs 2010?	To what extent directives for monitoring and enforcement instruments have changed subsequently to the issuing of D.Lgs 2010?

Has the process of decision making internal to the organization changed consequently to the issuing of D. lgs 2010? How?	To what extent the process of decision making internal to the organization has changed subsequently to the issuing of D. Lgs 2010?
When changed) To what extent the support to reaching objectives in the flood risk management policy has changed	To what extent the support of reaching objectives in the flood risk management policy has changed?
Has formal access from political supporters outside of the implementation agency, changed subsequently to the D. lgs 2010? How?	To what extent has formal access to political supporters outside the Regione Liguria changed subsequently to the D.Lgs 2010?
Has the extent by which the policy design enables adaptation by the implementing agencies for achieving the policy outcomes, changed subsequently to the 2010?	To what extent the policy design that enables the adaptation of Regione Ligura for achieving the policy outcomes, changed subsequently to the D.Lgs 2010?

Appendix “B” Chapter 3

Interview form submitted to Civil servants. On the left column are the translations of questions in Italian, correspondent to each element of evaluation. On the right column is shown the relative question that asks to assign a value to the degree of change of each criterion (consequently to the issuing of D. Lgs n°49 2010).

Quali accordi governativi che influenzano la possibilità di rischio alluvioni sono stati presi successivamente al D. Lgs n°49/2010 in Liguria?	Assegni un valore da 1 a 7 al cambiamento della possibilità di rischio conseguente al D. Lgs n°49/2010
Quali sono stati I cambiamenti più evidenti nella routine di gestione del rischio alluvioni in Liguria in successione al D.Lgs n°49/2010?	Assegni un valore da 1 a 7 al grado di cambiamento della routine di gestione del rischio alluvioni in successione al D. Lgs n°49/2010
Questo cambiamento ha influenzato i piani di gestione del rischio alluvioni a livello di tempistiche d’attuazione e/o scale spaziali?	Assegni un valore da 1 a 7. Il Cambiamento delle strategie di gestione del rischio alluvioni ha influenzato i piani a livello temporale e spaziale?
Come, questi cambiamenti (in accordo con quanto detto sino ad ora) hanno influenzato la possibilità di potenziali conseguenze derivanti da eventi alluvionali?	Assegni un valore da 1 a 7. Successivamente al D. Lgs 2010, accordi, progetti e/o misure governative hanno influenzato la potenzialità di conseguenze date da un eventuale alluvione.
Sono, I ruoli istituzionali sul recupero socio-territoriale conseguenti a un evento alluvionale, cambiati dal D. Lgs n°49/2010 ad oggi?	In che scala sono cambiati i ruoli relativi al recupero socio-territoriale conseguenti ad un evento alluvionale da una scala da 1 a 7; dove 1 è “non sono cambiati” e 7 è “cambiamento radicale”.
Sono stati introdotti, successivamente al D. Lgs 49°/2010, metodi di miglioramento/apprendimento formali per l’istituto responsabile per la Gestione del Rischio alluvione?	In una scala da 1 a 7 dove 1 è “nettamente peggiorata” e 7 è “nettamente migliorata” Successivamente al D. Lgs 2010 la capacità di apprendimento dell’autorità competente della strategia per la gestione del rischio alluvioni come è cambiata?
Dopo D.Lgs n°49/2010, è stato dato/aumentato lo spazio per progetti di sperimentazione di nuove tecniche per prevenire o lenire danni conseguenti ad eventi di carattere alluvionale?	In una scala da 1 a 7. Successivamente al D. Lgs 2010 gli spazi dedicati a bacini di sperimentazione sono rimasti invariati o sensibilmente aumentati?
Sono le tempistiche di revisione dei piani di bacino in relazione ad informazioni sul cambiamento climatico ed alluvioni, cambiate successivamente al D. Lgs n°49/2010?	In una scala da 1 a 7 dove 1 è “estremamente diminuiti” e 7 è “estremamente aumentati”, come sono variate successivamente al D. Lgs 2010 le tempistiche di revisione dei piani di gestione del rischio in relazione ad

	informazioni accumulate sul cambiamento climatico
Ci sono stati cambiamenti sostanziali nel processo di gestione del rischio alluvioni in relazione a riconoscimenti di potenziali rischi futuri successivamente al D. Lgs n°49/2010?	Su una scala da 1 a 7 dove 1 è “impercepibile” e 7 è “intensa” qual è l’ intensità del cambiamento nei piani di gestione del rischio in relazione a riconoscimenti di potenziali rischi futuri?
Si percepisce un cambiamento successivamente al D. Lgs n°49/2010 in termini di efficienza, per quanto riguarda la gestione di risorse?	In una scala da 1 a 7 dove 1 è “molto diminuita” e 7 “massimizzata” come valuta l’efficienza in relazione alla gestione delle risorse dall’ autorità preposta all’implementazione del D. Lgs 2010.
Stanno le misure di gestione del rischio alluvioni prese successivamente al D.Lgs n°49/2010 risultando in benefici sostanziali che permettono la riduzione di un approccio settoriale (molteplicità di interventi, schemi e progetti)?	Che intensità hanno avuto i cambiamenti nella gestione del rischio alluvioni in termini di approcci integrati’ 1 in questo caso equivale a “interventi settoriali sono predominanti” mentre 7 “interventi integrati sono dominanti”
A vostro avviso, è il framework legale in relazione alla gestione del rischio alluvioni diventato più efficiente in rispetto al processo di prender decisioni e implementarle, in successione al D. Lgs n°49/2010?	Quale grado in una scala di valori da 1 a 7, darebbe al cambiamento relativo all’efficienza della routine dell’ autorità responsabile per la gestione del rischio alluvioni per quanto concerne il processo decisionale.
A vostro avviso, Sono gli obiettivi regionali per la salvaguardia del territorio e per la protezione civile in linea con la Direttiva alluvioni FRM Directive 2007/60/EC, recepita dall’ordinamento italiano con il D. Lgs n°49/2010?	In una scala di valori da 1 a 7. Sono gli obiettivi regionali per la salvaguardia del territorio e per la protezione civile in linea con la Direttiva alluvioni FRM Directive 2007/60/EC, recepita dall’ordinamento italiano con il D. Lgs n°49/2010?
A vostro avviso, quanto sono complementari gli obiettivi dettati dalla FRMD 2007/60/EC con le politiche di sviluppo della regione Liguria?	In una scala di valori da 1 a 7. Quanto sono complementari gli obiettivi dettati dalla FRMD 2007/60/EC con le politiche di sviluppo della regione Liguria?
Quali sono le organizzazioni responsabili per l’implementazione fisica degli obiettivi del piano di bacino? Sono i loro ruoli cambiati successivamente al D. Lgs n°49/2010?	Con quale grado di intensità i ruoli delle organizzazioni competenti per l’implementazione di piani di gestione del rischio sono cambiati se misurati con una scala di valori che va da 1 a 7?
Lo Stato ha esteso o modificato il numero di sanzioni per organizzazioni responsabili per l’implementazione del D. Lgs n°49/2010 nel caso di mancata o incorretta ottemperanza?	Con che intensità sono cambiate le sanzioni (relative al mancato ottemperamento degli obiettivi richiesti) destinate alle organizzazioni responsabili per l’implementazione del D. Lgs 2010?
Lo Stato ha impiegato adeguati mezzi di controllo per assicurarsi una corretta implementazione da parte delle UoM del D. Lgs n°49/2010?	Con quale intensità in una scala da 1 a 7, vi sono controlli governativi sulla regione per assicurarsi una corretta implementazione del D. Lgs 2010?
Il processo decisionale relativo alla gestione del rischio alluvioni ha subito cambiamenti in successione al D. Lgs n°49/2010?	In una scala di valori da 1 a 7, quanto è cambiato il processo decisionale rispetto alla gestione del rischio alluvioni in successione all’implementazione del D. Lgs 2010?
Quando cambiato. Quanto ha influenzato la capacità della Regione di raggiungere gli obiettivi dettati dal D. Lgs n°49/2010?	Quando cambiato, sempre assegnando un valore nella scala numerica da 1 a 7. Quanto ha influenzato la capacità della Regione di raggiungere gli obiettivi dettati dal D. Lgs n°49/2010?

É l'accesso formale di attori al processo elaborazione dei piani di gestione alluvioni al di fuori della Regione, cambiato successivamente al D. Lgs n°49/2010? Come?	Su una scala di valori da 1 a 7, quanto è diminuito/aumentato lo spazio per l'accesso ad attori al processo di elaborazione dei piani di gestione alluvioni in successione all'implementazione del D. Lgs 2010?
A vostro avviso il D. Lgs n°49/2010 e conseguenti leggi regionali hanno influenzato la capacità di adattamento della Regione per raggiungere gli obiettivi dettati dalla FRM 2007/60/EC?	Su una scala di valori da 1 a 7 quanto, il D. Lgs 2010 ha influenzato la capacità di adattamento della Regione nel raggiungimento degli obiettivi dettati dalla FRM 2007/60/EC

Appendix "C" Chapter 3

Comitato Tecnico di Bacino offices. On the right column name of the offices in Italian whereas on the right column the correspondent translations in English

Vice direzione generale urbanistica e pianificazione territoriale	Head office for urban and environmental planning.
Vice direzione generale ambiente	Office for the environment
Vice direzione generale trasporti ed infrastrutture	Office for transports and infrastructure
Affari giuridici pianificazione territoriale	Normative environmental planning
Urbanistica	Urban Planning
Pianificazione territoriale, tutela del paesaggio e damanio marittimo	Environmental planning, preservation of landscape and coastal areas
Programmi urbani complessi ed edilizia	Complex urban plans and constructions
Affari giuridici ambiente	Normative(s) in matters of environment
Aria, clima e rifiuti	Air, climate and waste
Ecosistema costiero ed acqua	Coastal ecosystems and water
Valutazione impatto ambientale e sviluppo sostenibile	Evaluation of environmental impacts and sustainable development
Protezione civile	Civil protection
Assetto del territorio	Territorial assets
Difesa del suolo Genova	Landscape protection/preservation Genova
Difesa del suolo La Spezia	Landscape protection/preservation La Spezia
Difesa del suolo Savona ed Imperia	Landscape protection/preservation Savona and Imperia
Trasporto pubblico regionale	Regional public transport
Infrastrutture	Infrastructures

Appendix "D" Chapter 4-5

Civil servant ARPAL interview, the subject had a managerial role and it was referred to in the text with "interviewed n°1".

R: Come gli accordi governativi presi successivamente al decreto legislativo, hanno influenzato la possibilità di rischio alluvione?

I: Direi che essenzialmente che da un lato quello che potuto percepire io è stato un aumento delle attenzione ai finanziamenti alle azioni di contrasto al rischio metro-idrologico, quindi ove possibile sia a livello internazionale europeo sia a livello nazionale e regionale, effettivamente le istituzioni finanziano, finanziano le attività di contrasto e di previsione del rischio. Questo è stato un salto di qualità evidente. L'altro aspetto è nella risposta, queste opportunità. Una risposta più congiunta e coordinata tra vari enti di gestione del rischio. Quindi la sensibilità cresciuta

a tutti i livelli, sia quello legislativo di amministrazione territoriale e poi tecnico scientifico, diciamo che tutti i livelli negli ultimi anni hanno trovato la capacità di collaborare sia all'interno dei progetti, di miglioramento, progetti sperimentali, progetti di ricerca operativa diciamo sia poi nell'attività vera e propria. Quindi una maggiore capacità di gestire il miglioramento l'aggiornamento e di lavorare insieme

R: Come questi ultimi accordi governativi hanno influenzato le potenziali conseguenze derivanti da un evento alluvionale in successione al decreto?

I: Mah, sicuramente direi anche qui per esempio nell'ambito di monitoraggio c'è un'attività anche a livello nazionale di co-finanziamento per esempio dei sistemi di monitoraggio, anche se questa non è sempre garantita però diciamo che c'è uno sforzo per cercare di rendere più (..) ecco questi finanziamenti di cui parlavo prima, cioè adesso legati a progetti, renderli invece sistematici e adeguati, questo è lo sforzo che invece diciamo è difficile da concretizzare spesso. Diciamo che nell'ambito della protezione civile gli ambiti funzionali, quindi coordinato dal dipartimento di protezione civile nazionale e che si avvale dei centri regionali, quindi decentrati, ha fatto uno sforzo per cercare di gestire al meglio le risorse che c'erano in modo coordinato per esempio in Liguria c'è il Radar piemontese e ligure che è gestito dalle due regioni perché interesse delle due regioni, adesso stiamo portando avanti qualcosa di analogo con la Toscana sul versante spezzino questo è un piccolo esempio ma poi possiamo farne altri.

R: Come, successivamente al decreto legislativo è cambiato l'impiego di risorse di istituzioni responsabile per la gestione del rischio alluvioni?

I: Ritengo ci sia una migliorata efficienza, ripeto, il tema è quello del fatto che c'è una buona disponibilità di interventi mirati, quindi nell'ambito di progetti, fondamentalmente e queste vengono sempre più sfruttate dagli enti ed usate al meglio. La lacuna invece che rimane a livello istituzionale corrente è che mancano le risorse stabili, stabilizzate. E per risorse intendo sia quelle economiche, direttamente collegabili agli investimenti che quelle umane, quindi di strutturare chi deve vigilare e prevedere in modo adeguato anche in questo senso insomma, col personale, sufficiente e qualificato.

R: Come è cambiato il processo di gestione di rischio alluvione in relazione al riconoscimento di rischi potenziali futuri in successione al decreto?

I: Dunque diciamo che a livello di cambiamento climatico a scala regionale c'è ancora molto da fare dal punto di vista tecnico scientifico, per definire esattamente ancora cos'è il cambiamento climatico cioè come si estrinseca a scale locale. Aldilà di questo tutte le istituzioni parlano di cambiamento climatico associandolo in qualche modo all'idea di causa delle alluvioni sempre più frequenti che ci colpiscono, in realtà sta aumentando la consapevolezza credo, accanto a questo tema importante del cambiamento climatico, c'è anche il tema dello sfruttamento del territorio e credo che in qualche modo sia quella leva su cui agire, e quindi cercare di evitare, e secondo la mia impressione si sta realizzando, a livello infrastrutturale e strutturale, tutti quei interventi che hanno devastato il territorio e lo hanno reso più vulnerabile, cioè mi sento di dire che a livello locale, non c'è bisogno di scomodare il cambiamento climatico. La causa principale a mio parere per l'aumento di fenomeni alluvionali è l'abuso del territorio, indipendentemente poi dalla frequenza dell'effetto meteorologico con cui accadono questi avvenimenti. Cioè c'è un tale uso e abuso del territorio, c'è stato nel passato, che ha reso, tutto il territorio, in particolare la regione Liguria, molto vulnerabile. Quindi di conseguenza della consapevolezza c'è, sia a livello di cambiamento climatico che abuso del territorio che sembra abbia adesso una certa attenzione. Questa consapevolezza non sono sicura che derivi da un input normativo, tuttavia c'è da dire che in ogni caso c'è e sta crescendo.

R: Come è cambiato il processo decisionale in relazione al processo di gestione del rischio alluvione successivamente al decreto?

I: Sì secondo me, anche questo è un processo graduale che poi in realtà va purtroppo anche a scatti e ovviamente purtroppo gli scatti sono legati agli eventi alluvionali che accelerano il processo. Quindi il processo decisionale tende ad aumentare la propria velocità a livello procedurale e precisione nel senso della proceduralizzazione diciamo così. Fino a qualche anno fa la protezione civile era vissuta da gente capace ma con un aspetto meno metodico, adesso si tende a studiare prima le cose, poi seguire tendenzialmente determinate linee. Quindi in questo senso si sta crescendo e sta migliorando, l'effetto si sente. Quindi viene messa maggior cura, man mano passa il tempo, nel proceduralizzare tutta l'organizzazione gli aspetti sia nella fase di previsione che di gestione e in un sistema complesso come quello della protezione civile che vede coinvolti tanti enti diversi in un momento di emergenza questo è un aspetto importante, quindi io non lo vedo come un appesantimento. Se fatto nella maniera giusta, è assolutamente una cosa positiva. Per esempio parlo dei piani di emergenza, parlo a livello comunale, sono dei piani che devono esistere, devono esserci e cosa sono? Sono dei documenti che pianificano in tempo di pace i tipi di azioni che devono essere seguite, e la catena

di comando, di azioni che devono essere intraprese in un momento di emergenza. Più si pianifica questa cosa in tempo di pace, più si riesce a gestire l'emergenza

R: come sono stati cambiati i ruoli delle istituzioni responsabile per l'implementazione fisica degli interventi in successione al decreto legislativo?

I: Diciamo che c'è sicuramente la sfida della tempestività della velocità e dell'essere presenti nel come dire, efficaci nel momento critico, cosa che in Liguria, la Liguria costituisce un banco di prova molto difficile perché noi abbiamo un territorio ed un tipo di eventi che hanno uno sviluppo talvolta estremamente repentino, e quindi poco tempo d'azione per tutti. Quindi in questo senso sì, cioè dal punto di vista nostro del monitoraggio, la sfida è quella di creare dei canali di comunicazione rapidi e anche lì la sfida è del sindaco, del comune il quale ha il presidio ultimo sul territorio, sì la sfida è costituita nel divulgare velocemente la notizia in tempi rapidi. Per quando riguarda l'operazione di monitoraggio è la sfida di ARPAL ed è sempre stato il nostro ruolo. Mentre quando si parla di implementazioni fisica degli interventi, strutturali destrutturali non è il nostro ambito

R: Come è cambiata l'accessibilità di soggetti esterni per l'elaborazione dei piani di gestione rischio alluvioni in successione al decreto?

I: Posso dire che per esempio in Liguria per esempio c'è un filone portato avanti dalla protezione civile regionale con aiuto di fondazioni di ricerca come CIMA, uno sforzo per condividere i piani di gestione di emergenza comunali come quelli di cui parlavo prima. Il sindaco in questo caso, sente l'esigenza di rendere partecipe la cittadinanza in qualche modo diciamo. Perché l'unico modo per poi avere nel momento critico dei cittadini coscienti, quindi in modo di agire e reagire nel modo giusto e di coinvolgerli nel processo di pianificazione. Questo processo è stato sperimentato e fatto. Se questi soggetti esterni sono soggetti intesi come enti di ricerca che possono contribuire all'aggiornamento dei piani questo è un sì, senz'altro, perché la Liguria l'ha sempre fatto, la regione si è sempre avvalsa di questi. Dal 2010 posso dire che a mio avviso ha cambiato molto, ora però non le so dire se è stato in conseguenza al decreto o sia stato un evento alluvionale particolarmente intenso di quei anni ad aver influito in tal senso, ma forse tutte e due.

R: Come il decreto legislativo ha influenzato la capacità dell'organizzazione di gestione del rischio per l'ottenimento degli obiettivi preposti dal decreto stesso?

I: Io penso che in realtà più che la capacità abbia influenzato la consapevolezza dell'urgenza. Il fatto poi che la regione riesca a fare quello che deve fare non è che dipenda tanto dal decreto perché come dicevo prima c'è una carenza di risorse. Io credo che in questi anni ci sia stata una grande crescita di consapevolezza e di voglia di fare. Però il problema come dicevo è che le risorse sia umane che strumentali che economiche siano sempre le stesse o magari anche ridotte e quindi diventa veramente un grosso problema. Anche lì, sono state per esempio abolite le provincie che avevano un ruolo sul territorio molto importante per molti aspetti come per esempio la gestione del rischio idraulico. Adesso diciamo la competenza è passata alla regione ma ci sono un sacco di limitazioni, gestionali, amministrative e che rendono molto difficoltoso l'attuazione di questo tipo di attività. E quindi c'è la consapevolezza e lo sforzo normativo ma mancano le risorse. Le riforme della pubblica amministrazione hanno tagliato le risorse e siamo in una fase di riorganizzazione. La transizione di competenze dalla provincia alla regione è un problema che la regione sta ancora affrontando in particolare su queste situazioni civili. Un altro problema è quella della forestale che non c'è più ed è divisa un po' tra vigili del fuoco e tra carabinieri è di nuovo il tema dell'anti-incendio un tema tutto da riaffrontare.

R: come è stata cambiata la routine di gestione del rischio alluvioni in successione al decreto legislativo?

I: Ripeto, penso che sia stato legato sì al decreto ma anche all'accadimento di eventi alluvionali degli ultimi anni. La gestione del rischio si è cambiata perché anche diciamo in un contesto nazionale senz'altro noi seguiamo anche gli impulsi delle direttive al livello della protezione civile nazionale. Adesso io mi riferisco anche al recente aggiornamento di procedure sul territorio ligure dove si prova ad essere più specifici a livello di rischio sia zonizzazione sia a livello di tempistica. Si cerca anche quell'elemento di fornire informazioni utili al cittadino agli utenti agli operatori al sistema e a tutto e questo è sempre stato una politica della Liguria ma sicuramente in questi anni è stato incrementato questo aspetto. Voglio dire che sul sito della regione Liguria dedicata all'allerta c'è tutta una sezione in cui cerchiamo di dare elementi utili in tempo reale e quindi c'è l'accesso al radar, al satellite, alle fulminazioni, a quello che sono i nostri messaggi di monitoraggio, accesso ad informazioni sull'evento. Insomma cercare di dare noi delle informazioni per nostro conto e fornire più possibile strumenti a chi poi deve operare sul territorio. La gestione del rischio è stata migliorata a livello di comunicazione che cerca di essere più veloce e tempestiva anche attraverso i social network invece che il classico fax che deve avere una prova di ricevuta di ricezione ect. E poi questa idea di fornire direttamente i dati in tempo reale a tutti, al sindaco al cittadino all'utente in generale. Qui c'è un certo sforzo sotto questo punto di vista. Queste informazioni dovrebbero influenzare i piani di gestione alluvione, abbiamo contatti con i vari sindaci dove li si informa con dati in tempo reale e li avvertano in caso di superamento di una certa soglia, dove il sindaco si può

definire autonomamente, come per esempio la soglia di pioggia o soglia di un livello di un corso d'acqua. Questo dovrebbe influenzare i piani di bacino pesantemente nel senso che il sindaco nel fare il suo piano di emergenza dovrebbe darsi delle soglie di attenzione crescente che fanno scattare delle fasi operative del piano di emergenza. Dipende dai sindaci e dalla dimensione dei comuni e delle competenze tecniche che hanno per ricevere un dato come queste informazioni vengano implementate nei piani di emergenza. Però dove invece c'è questa possibilità ci sono sindaci che hanno messo in piedi cose di questo genere e le stanno facendo.

R: Come successivamente al decreto sono cambiati i metodi di studio delle criticità funzionali delle istituzioni responsabili per la gestione del rischio alluvioni?

I: Ora noi non è che siamo cambiati perché da sempre noi ci siamo dati delle regole. Noi siamo certificati ISO 2001. Viviamo l'aspetto di certificazione come una procedura di routine. Noi siamo obbligati ogni anno a riprendere in mano le nostre procedure e abbiamo tutta una serie di indicatori che esaminiamo internamente, vediamo quali sono state le criticità e i margini di miglioramento e facciamo per ogni anno, ci diamo degli obiettivi come tentativo di miglioramento. Questo è indipendente dal decreto. Quello che è successo negli ultimi anni come per esempio una proposta della fondazione cima in collaborazione con il dipartimento di protezione civile nazionale che qui in regione è stata quella di candidarsi come fondazione a fare periodicamente una sorta di auditing delle istituzioni, quindi ci dovrebbe essere un ente esterno competente che periodicamente intervista gli operatori e visiona le procedure dando il suo apporto nello studio di criticità delle istituzioni responsabili. Questo diciamo che è stato pensato ed è stato in embrione diciamo in regione Liguria. Noi in parte l'abbiamo fatto, non sono sicura che la regione o la protezione civile lo abbiano fatto, però diciamo è sul tavolo di discussione.

R: Dopo il decreto come è stato distribuito lo spazio per tecniche di sperimentazione in merito alla gestione del rischio alluvioni?

I: Dunque come è stato distribuito a livello regionale non lo so come quadro generale, ma dal nostro punto di vista è stato dato sicuramente ampio spazio al monitoraggio strumentale, quindi diciamo la rete osservativa e tutto quello che può essere a supporto della modellazione e della rivelazione. Altri interventi mi sembra molto legati alla comunicazione anche se l'aspetto della comunicazione è complesso e bisognerebbe fare un salto di qualità, anche quando ci troviamo a confrontarci con colleghi questo è l'aspetto sempre più carente. Bisognerebbe cominciare a pensare di affidarsi veramente a delle professionalità mettere una strategia più solida. Non mi risulta che il tema della comunicazione sia stata sufficientemente ripresa del decreto. Ci fermiamo molto spesso sul punto di vista tecnico e sembrava che l'aspetto della comunicazione venisse sempre da sé ed invece no, anzi, certe volte conta quasi di più diciamo della sostanza. Magari uno paradossalmente cura il dettaglio dell'informazione poi questa informazione non arriva. Magari sarebbe meglio che l'informazione arrivasse anche se un po' più grossolana paradossalmente ma per lo meno in modo efficace.

R: Come sono cambiate le tempistiche di revisione dei piani di gestione alluvioni in relazione a informazioni sul cambiamento climatico successivamente al decreto legislativo?

I: A me non risulta che a livello regionale questo abbia avuto un grosso impatto. Non ne sono a conoscenza.

R: A vostro avviso come è cambiato l'approccio alla gestione di rischio alluvioni in termini di settorializzazione e integrazione?

I: Direi senz'altro che in questi anni ci sia stata una maggiore integrazione, perlomeno sulla consapevolezza che dobbiamo giocare di squadra e questo avviene nel momento dell'evento ma questa è una cosa che viene preparata prima, in tempo di pace bisogna pianificare di più insieme. L'occasione delle normative europee ha fornito una bella opportunità per una maggiore integrazione degli enti come regioni e comuni. Questo è successo. Poi certo non si può nascondere che durante un evento alluvionale c'è il solito discorso dello scarica barile che per carità è molto umano. Ma per il momento prevale ancora il discorso per il quale l'unione fa la forza.

R: Successivamente al decreto come è cambiato il processo di prendere decisioni ed implementarle per istituzioni responsabili di gestione del rischio alluvioni?

I: Una cosa importante che forse risponde a questa domanda io direi che è stata... allora c'era già nella direttiva italiana del 2004 relativa all'allertamento nazionale e la rete dei centri funzionali però direi che è stata ribadita e precisata attraverso delle note, anche se stiamo aspettando la vera e propria normativa però attraverso una serie di comunicazioni stiamo aggiornando e credo che sia anche figlia del decreto alluvioni cioè il discorso delle fasi operative, elemento cruciale. Questo vuol dire che nella gestione del rischio non deve esistere solo l'allerta che è solo previsione, ma anche il tema della gestione dell'evento in accordo con le fasi operative che sono state identificate su scala

nazionale come attenzione, pre allarme e allarme, in qualche modo a livello procedurale i piani dovrebbero tener conto da un lato c'è un sistema di allertamento con l'allerta a colori, ma anche slegato da questo c'è anche un tema legato alle fasi operative. Quindi i piani di emergenza devono avere al loro interno scandite le diverse fasi a seconda della gravità dell'evento. Quindi secondo me quindi il fatto di prender decisioni ed implementarle è diventato più complicato, più puntuale, non deve solo far riferimento all'allerta ma anche una pianificazione dell'azione della protezione civile scandita per fasi operative. Questo è un passaggio col quale non ancora tutti sono al passo.

R: Come è stato modificato il numero di sanzioni a livello nazionale per mancato ottemperamento degli obbiettivi dettati dalla direttiva?

I: Non saprei. A livello regionale non è cambiato tanto. Le faccio un esempio sul fatto che la regione a legiferato e deliberato in merito al fatto che i comuni devono avere il piano di emergenza comunale e che deve essere fatto in un certo modo. In realtà diversi comuni non avevano comunque piani di emergenza ed in più non sono controllati da nessuno o almeno non credo e quindi su questo aspetto siamo più indietro perché non c'è un sistema di monitoraggio in tal senso.

Appendix "E" Chapter 4-5

Civil servant Regione Liguria interview, the subject had a managerial role and it was referred to in the text with "interviewed n°2".

Come, a suo avviso, gli accordi governativi in relazione alla gestione del rischio alluvioni hanno influenzato la possibilità di rischio alluvioni in successione al Decreto Legislativo 49/2010.

I: Non ha modificato nulla, perché comunque la pericolosità climatica che abbiamo incide in maniera preponderante. Quello che è stato fatto come sforzo è stato prevalentemente conoscitivo per quanto riguarda la regione Liguria. Più in generale l'Italia ha avuto l'opportunità di partire prima del recepimento della Direttiva attraverso la pianificazione di bacino. Quindi l'aspetto conoscitivo previsto dalla FRMD era già coperto nella regione Liguria. Quindi abbiamo usato metodi tradizionali che si basano sulla legge sulla difesa del suolo del 1983 (Decreto Sarno) che ha riconosciuto il pericolo alluvioni in distinzione dalla difesa del suolo. Tuttavia ha influenzato sulla mitigazione del rischio più che la possibilità. Il passaggio fondamentale è dall'aspetto conoscitivo agli interventi. Dove la direttiva invece ha influenzato maggiormente su come indirizzare gli interventi sul territorio

R: Come questi ultimi, hanno influenzato la possibilità di potenziali conseguenze derivanti da eventi alluvionali?

I: Gli accordi governativi costringono l'Italia a prevedere un piano di interventi standardizzato a livello Nazionale, sono stati dati dei criteri riassunti con progetto Italia sicura che quindi ha standardizzato il contenuto progettuale degli interventi da implementare.

R: Con standardizzazione cosa intende?

I: Processi di Routine per la progettazione e un cambiamento delle priorità sugli interventi da svolgere sul territorio. Mentre prima si favoriva accontentare tutti e dare finanziamenti a pioggia e poi la qualità dell'intervento non aveva una buona valutazione cost-benefit non aveva una buona valutazione sugli effetti veri della mitigazione del rischio, oggi Italia sicura che è una conseguenza di questi accordi intergovernativi, ha prodotto sicuramente un miglioramento della qualità della progettazione e quindi il cambiamento della possibilità di conseguenze è importante. Perché ha dato un indirizzo molto specifico

R: A vostro avviso successivamente al decreto come è cambiato il livello d'impiego di risorse delle istituzioni responsabili per la gestione del rischio alluvioni?

I: Decisamente più efficiente conseguentemente al progetto Italia Sicura che si propone di finanziare gli interventi in funzione della valutazione del rischio, quindi partendo dalla stessa definizione del rischio mira per prima cosa a vedere qual è il numero degli abitanti della popolazione soggetta all'intervento e quali sono le conseguenze dell'intervento finanziato. Tramite mezzi statistici e non. Sostanzialmente si opera attraverso mezzi informativi. Quindi tramite una valutazione di costi benefici e tramite l'utilizzo di altri mezzi informativi si consente al governo di individuare le priorità senza criteri molto più generali come avveniva in precedenza.

R: Come è cambiato il processo di gestione del rischio alluvioni in relazione a riconoscimenti di potenziali rischi futuri successivamente al decreto legislativo.

I: L'Italia ha molti problemi di questo tipo ed è partita prima rispetto ad altri paesi. Il decreto Sarno infatti già si occupava di questo tipo di problema. La Liguria nel 2004, quindi ben prima del decreto del 2010, era già coperta a livello conoscitivo sulle principali problematiche. Il quadro che ne emerge è catastrofico, soprattutto per il territorio particolare che abbiamo. Tutte gli interventi passati hanno esponenzialmente difatti aggravato la situazione aumentato la possibilità alluvioni sin dall'800 (ex. Cementificazione selvaggia). Quindi sostanzialmente il livello conoscitivo non è stato particolarmente influenzato. Mette più pressione agli enti locali proprio per la raccolta di informazioni e per interventi di tipo non strutturale perché gli interventi di tipo strutturale avrebbero un costo insostenibile. Adesso i mezzi di informazione della popolazione civile sono diventati i mezzi principali. L'informare la società civile è diventata una necessità in conseguenza a casi di responsabilità legale passati. Successivamente al decreto questo processo di informazione prende momento perché la direttiva costringe ad agire verso questo tipo di interventi.

R: Come è cambiato il processo decisionale relativo alla gestione del rischio alluvioni in successione al Decreto?

I: Qui è successo un disastro. Nel senso che a scapito del processo decisionale che tuttavia migliora la qualità della progettazione, d'altra parte con la soppressione delle comunità montane e questa fase transizione delle provincie che dovevano essere abolite e che non sono state abolite in seguito al referendum. La transizione di poteri di governo dalla Provincia alla Regione è dovuta tuttavia a dinamismi interni che non hanno niente a che fare con l'implementazione della direttiva. Tutto quello che era presidio territoriale delle comunità locali è stato accentrato e quindi la gestione economica è più coerente, il presidio sul territorio è sparito. Quindi è ininfluente dal Decreto Legislativo. È un problema interno, dovuto ad una revisione della pubblica amministrazione dove si vuole efficienza economica ma una riduzione di personale e quindi il risultato è scadente

R: Come è cambiato il rapporto di interesse dell'istituzione responsabile della gestione del rischio alluvioni in relazione agli obiettivi nazionali dettati dal decreto?

I: Anche qui è indipendente dal Decreto in quanto la riforma costituzionale è indipendente dal Decreto. Il cambiamento riguarda un cambiamento della struttura della pubblica amministrazione in generale. Questa ristrutturazione non è stata successivamente preparata. È stata preparata a tavolino valutandone i benefici economici, quindi per dare una risposta a livello Europeo sulla spesa delle pubbliche amministrazioni. L'efficacia di questo cambiamento è nullo, come lo si vede nella mancanza di manutenzione della proprietà pubblica. Il decreto alluvioni razionalizza la spesa tuttavia lascia impreparati i comuni (coloro che sono sul territorio). Funziona a scala nazionale-regionale a scapito delle comunità locali. Le iniziative a livello locale fanno molta più fatica a nascere. I deboli sono più deboli di prima, i forti sono più forti di prima. Tuttavia con questa ripartizione di poteri i lavori per il canale scolmatore unico del Bisagno sono ripartiti diminuendo sostanzialmente il potenziale impatto di alluvione nella zona a densità demografica elevata, questo obiettivo non veniva raggiunto dagli anni 80. Tuttavia, quei 250 milioni di euro che sono stati destinati al mega intervento lascia tutti gli interventini indietro perché drena i soldi pubblici. È una quesitone di scelte e di priorità

R: Come sono stati cambiati i ruoli per le organizzazioni responsabili per l'implementazione fisica degli interventi previsti dal piano di gestione alluvioni

I: Non dipende dal decreto legislativo ma dipende dal cambiamento strutturale dell'amministrazione pubblica derivanti da meccanismi a livello nazionale.

R: Come è cambiata l'accessibilità per soggetti esterni al processo di elaborazione dei piani di gestione alluvioni al di fuori dell'istituzione responsabile della gestione del rischio alluvioni successivamente al Decreto Legislativo.

I: Le priorità per la retribuzione di finanze per l'attuazione di interventi è stata ridefinita con il decreto, quindi è molto facile ricevere finanziamenti per grandi progetti ma non per piccoli interventi. La partecipazione della società civile viene demandata ai comuni e funziona abbastanza. L'associazione di comuni di Valle Scrivia per esempio si è fatta portavoce per un insieme di comuni che hanno richiesto uno studio particolareggiato del loro territorio. Tuttavia questo non sono meccanismi interni e non vi è stato nessun tipo di influenza da parte del decreto.

R: Come il Decreto Legislativo ha influenzato la capacità dell'istituzione responsabile per la gestione del rischio alluvioni di adattamento per il perseguimento degli obiettivi preposti?

I: Quello che ne viene fuori dal Decreto che è Italia Sicura ha sicuramente influenzato perché ha dettato particolari criteri che hanno orientato il processo decisionale in rispetto ad una catena di interventi

R: Come è stata cambiata la routine di gestione del rischio alluvioni in Liguria in successione al Decreto?

I: La routine è cambiata per meccanismi di cambiamenti interni per la ristrutturazione della gestione della pubblica amministrazione. Dal 2015 infatti le province demandano la gestione del rischio alluvioni alla regione. Tuttavia questo è avvenuto indipendentemente dal Decreto Alluvioni.

R: Come questo cambiamento ha influenzato i piani di gestione del rischio alluvioni a livello di tempistiche di attuazione e nel design?

I: Mentre prima si proponeva un progetto preliminare di sistemazione vaga e si cercava di reperire i fondi, questo invece ha costretto gli enti locali, severamente, nel voler proseguire la mitigazione del rischio idraulico, a promuoversi, a diventare parte attiva nell'iniziare la progettazione e quindi non proporre più cose vaghe ma invece costretto a proporre interventi mirati. Quindi questo è stato incisivo

R: Come sono cambiati in successione al Decreto i metodi di studio delle criticità funzionali delle istituzioni per la gestione del rischio alluvioni?

I: Dunque, anche qui siamo in una fase di cambiamento sostanziale però il Decreto ha influenzato poco qui perché l'Italia era partita con la pianificazione di Bacino, quindi diciamo che i metodi di studio delle criticità non sono dipendenti dal Decreto legislativo ma si rifanno ai criteri che sono stati sviluppati con la pianificazione di bacino. Ovviamente il Decreto Legislativo ha servito d'impulso, tuttavia la metodologia e la procedura era già affidata ad un bagaglio culturale risalente a ben prima il 2010. Una cosa che viene introdotta con il decreto legislativo è l'analisi del rischio residuale ovvero qual è lo scenario di rischio conseguentemente all'intervento progettato. Cosa che effettivamente non era richiesta prima. Questo è molto influente perché oggi uno dei parametri che viene effettuato è un'analisi cost-benefit, quanto mi viene a costare e quanto mi riduce il rischio, quindi so cosa mi devo aspettare dopo quel tipo di intervento, e questo è fondamentale.

R: Dopo il Decreto, come è stato distribuito lo spazio per l'impiego di nuove tecniche per prevenire o lenire danni conseguenti ad eventi di carattere alluvionale?

I: Non ci sono stati cambiamenti importanti a riguardo conseguentemente al recepimento della direttiva

R: Come sono cambiate le tempistiche di revisione dei piani di gestione in relazione ad informazioni sul cambiamento climatico ed alluvioni, successivamente al Decreto?

I: Anche qui direi che è abbastanza ininfluente dal decreto perché il decreto porta in sintonia la direttiva alluvioni con quella che è la pianificazione di bacino, cioè si fondono in unico strumento, le tecniche effettivamente cominciano a sentirsi, sembra che venga recepito un peso maggiore della protezione civile.

R: A vostro avviso, come è cambiato l'approccio alla gestione del rischio alluvioni in termini di settorializzazione ed integrazione?

I: La pianificazione di bacino ha permesso di avere un quadro generale. Noi ragioniamo sui corsi d'acqua principali, quindi lo scenario è completo a livello di integrazione. Il Decreto non ha influenzato, anzi si è fatto in modo che la Direttiva alluvioni si raccordasse con la pianificazione di bacino.

R: Come è cambiata la regolamentazione in relazione alla gestione del rischio alluvioni in rispetto al processo di prender decisioni ed implementarle, successivamente al decreto legislativo?

I: Sono dinamismi che erano già standardizzati, qui c'è un indirizzo specifico, le zone a maggior rischio se sono proposti interventi di rispetto si può accedere molto più facilmente ai finanziamenti in altre zone. Mentre prima c'era un percorso più articolato dove provincia per provincia proponeva una serie di interventi per graduatoria oggi è la regione che fa direttamente a questo lavoro. Il decreto ha influenzato marginalmente.

R: Come è stato modificato il numero di sanzioni nazionali per organizzazioni responsabili per l'implementazione del Decreto nel caso di mancata ottemperanza di perseguimento degli obiettivi preposti?

I: Il Decreto più che sanzionatorio è premiante, chi lavora bene prende soldi mentre chi non lavora bene sta al palo. Questo è stato premiante per la regione Liguria per come hanno lavorato Regione Provincia e comune nei lavori sul Bisagno. Il finanziamento dello stato ha preso circa il trenta per cento del budget Nazionale. Rimane sanzionatorio perché chi non lavora si prende le alluvioni. La meritocrazia è arrivata proprio con il decreto.

Appendix “F” Chapter 4-5

Civil servant Protezione Civile Regione interview, the subject had a role of collaborator and it was referred to in the text with “interviewed n°3”.

R: A suo avviso come gli accordi governativi presi tra istituzioni responsabili per la gestione del rischio alluvioni hanno influenzato la possibilità di rischio alluvione in successione al Decreto legislativo?

I: La possibilità di rischio alluvioni è pari a come era precedentemente, anzi forse è più alta siccome abbiamo piogge più forti e quindi gli eventi, più impattanti.

R: A suo avviso come gli accordi governativi presi in successione al Decreto hanno influenzato le potenziali conseguenze di eventi alluvionali?

I: Le conseguenze sono sempre da relazionarsi ai luoghi, perché ci sono in corso, per esempio qui regione Liguria, molti interventi di messa in sicurezza dei torrenti e delle tombinate derivanti dalle scorse alluvioni. Quindi nella speranza che eventi pari a quelli accaduti non facciano più esondare i corsi d'acqua, perciò è tutto relativo alla zona e all'evento che intercorre. Non si può rispondere in maniera omogenea ad una domanda del genere, a livello normativo è cambiato molto perché, continuo a parlare della regione Liguria, perché prima, in termini di protezione civile era un po' carente. La regione Liguria si sta conformando a tutte le norme di protezione civile, e quindi siamo sicuramente più pronti a gestire rischi derivanti da alluvioni.

R: Come a vostro avviso, successivamente al decreto, è cambiato l'impiego di risorse di istituzioni responsabili per la gestione del rischio alluvioni?

I: Sì certo, sto pensando cosa risponderti perché, la Liguria non ha grande risorse e non ce le ha mai avute e certamente con gli ultimi eventi qualcosa è cambiato. Però non è tanto legato alla normativa che la normativa data, siamo nel 2017. Le risorse sono arrivate perché sono capitati degli eventi in sequenza che si sono abbattuti sempre nelle stesse zone soprattutto i due eventi grossi di Genova che hanno portato ad avere grandi criticità e morti sul territorio quindi si è potenziata sicuramente la parte economica per mettere in sicurezza alcune zone. Cioè, diciamo che lo vedo più un potenziamento sulla base di quello che è successo, non sulla normativa. Poi magari le altre regioni sono diverse, ti parlo della Liguria che...

R: Come cambiato il processo di riconoscimento di potenziali rischi futuri successivamente al Decreto Legislativo?

I: Beh, ci sono, tutta la parte protezione civile fatte dai piani, quindi tutte le aree a rischio sono già catalogate ed in evoluzione. Perché noi abbiamo già una base di cartografia dove sono identificate le aree a rischio alluvione che ogni evento vengono aggiornate, modificate a seconda dell'evento successo e a seconda anche degli interventi fatti nel frattempo, quindi, zone messe in sicurezza, zone che non sono state invece messe in sicurezza, dove sono accaduti eventi particolari e quindi sono locate in continuo aggiornamento e quelle sono fondamentali perché tutto quello che è il sistema di protezione civile è poi basato su quello. Diciamo sul sistema di gestione dell'evento in corso.

R: A livello cartografico e/o tecnico è cambiato qualcosa secondo lei?

I: Negli ultimi anni no.

R: come è cambiato il processo decisionale relativo al processo di prendere decisioni ed implementarle da parte di istituzioni responsabili per la gestione del rischio alluvioni, successivamente al decreto?

I: Questa io non la so perché io prima non ero in protezione civile, quindi non ne ho idea

R: Come è cambiato il rapporto di interesse dell'istituzione responsabile per la gestione del rischio alluvioni nel raggiungimento degli obiettivi dati dal decreto in successione allo stesso?

I: Posso dire che la Liguria si sta organizzando da un paio di anni sulla direttiva e sul discorso di gestione del rischio a livello nazionale e questo è cambiato negli ultimi due anni. Prima avevamo per esempio per la procedura di allertamento i numeri e dall'anno scorso abbiamo i colori che il livello nazionale da cui tutti stanno prendendo. Siamo ancora in evoluzione ecco, quindi non siamo ancora arrivati ad un punto di gestione completo

R: Come sono cambiati successivamente al decreto i ruoli per l'implementazione fisica degli interventi dei piani di gestione del rischio alluvione?

I: Noi regione Liguria per esempio abbiamo fatto una riorganizzazione che sarà vigente dal 15 di marzo per cui per esempio i messaggi di criticità verranno emanati direttamente da ARPAL e non più la regione. La regione farà solo un ruolo di comunicazione e quindi la trasmissione dei messaggi d'allerta agli enti ma non è più l'ente che emette, ecco. Questa forse è una differenza, diciamo che è venuta fuori adesso, conformemente con la normativa, perché la norma comunque diceva che ARPAL come centro funzionale decentrato era competente nell'emissioni di messaggi di allerta. Era un po' il primo ruolo spostato quello della regione mentre adesso è proprio conforme a quella che è la normativa nazionale. Questa è proprio una cosa di questi ultimi giorni, non abbiamo ancora emesso il primo messaggio. Ci prepariamo, per questo weekend!

R: Come è cambiata l'accessibilità per soggetti esterni al processo di elaborazione dei piani di gestione del rischio alluvioni successivamente al decreto legislativo?

I: è tutto pubblicato su internet ormai quindi direi che l'accessibilità è totale su qualsiasi cosa. Direi non ci sia stato nessun cambiamento.

R: Come successivamente al decreto l'istituzione responsabile per la gestione del rischio alluvioni è stata influenzata nella capacità di adattamento nel perseguimento di obiettivi preposti?

I: Sì, sì, le ha influenzate perché le regioni sono obbligate a conformarsi alla normativa nazionale, è insomma la direzione che la Liguria ha preso.

R: Come è stata cambiata la routine di gestione del rischio alluvioni in successione al decreto legislativo?

I: Sì, uhm, semplicemente, diciamo che la regione Liguria si è conformata cambiando la sua definizione di rischi e numeri con il rischio colore, che è passata dall'allerta uno due all'allerta arancione rossa come le menzionavo prima.

R: come questo cambiamento ha influenzato la gestione del rischio alluvione in relazione ai tempi di attuazione dei piani e del design degli stessi.

I: Questa non la so, non ne ho idea!

R: Come sono cambiate successivamente al decreto i metodi di studio delle criticità funzionali dell'istituzione responsabile per la gestione del rischio alluvioni?

I: Direi che i metodi di studio non sono cambiati nel senso che allora, noi stiamo modificando un pochino la visione ma è una cosa del settore qua perché si sono unite autorità diverse che non sono più legate solo alla protezione civile ma sono legate anche al territorio, per esempio io arrivo dalla provincia, ex provincia e quindi difesa del suolo. Io ho una capacità di visione territoriale molto diversa da quella che è solo protezione civile. Con noi lavorano in coordinazione i quattro uffici territoriali di difesa del suolo che sono le ex provincie quindi, uffici estremamente territoriali operativi, ecco, questo sta cambiando, siamo in evoluzione anche su questo nel senso che ci stiamo organizzando per poter affrontare delle situazioni di emergenza coordinati. Ti dico, c'è stata l'alluvione ad Imperia ed è funzionato bene senza una procedura ancora esecutiva, ecco. Siamo in una fase di riorganizzazione e di aggiornamento quindi forse potrei rispondere meglio a queste domande tra un anno. C'è un rimescolamento di competenze perché per esempio quella di difesa del suolo dalla provincia alla città metropolitana sono state recuperate dalla regione. Nel senso che sono competenze regionali che la regione aveva delegato alle provincie, ora se le è riprese, quindi tutti gli uffici di difesa del suolo oltre che ad altre competenze sono diventati regionali e quindi concorrono anche loro nell'emergenza regionale.

R: Dopo il decreto come è stato distribuito lo spazio per l'impiego di nuove tecniche di sperimentazione per lenire o prevenire eventi di carattere alluvionale?

I: Qui noi stiamo facendo una sorta di sperimentazione col centro funzionale decentrato di ARPAL, perché noi stiamo rivedendo e cercando di coordinare tutta quella parte di soglie di rischio che vengono utilizzate da ARPAL per gestire l'emergenza, quindi le soglie degli strumenti degli idrometri eccetera, stiamo cercando di raccordarle con gli studi della normativa direttiva alluvioni, diciamo dei piani di bacino, che contengono proprio tutta la parte di studio operativo idraulico eccetera. Anche lì stiamo facendo un lavoro che è appena iniziato, quindi siamo ancora in evoluzione e siamo ancora anche verificando come farlo, però è un aggiornamento decisamente importante e sta appesantendo la protezione civile.

R: Come sono cambiate le tempistiche di revisione dei piani di gestione del rischio in relazione a informazioni sul cambiamento climatico in successione al decreto?

I: No tempistiche non ne so.

R: A vostro avviso come è cambiato l'approccio alla gestione del rischio alluvioni in termini di settorializzazione ed integrazione?

I: è cambiato per quello che dicevo prima, perché stiamo cooperando e coordinandoci tra gli enti, e quindi cercando di fare una catena di azioni e procedure d'intervento ed è diversa da quella precedente anche perché ti spiego, con tutti questi passaggi di norme e competenze, quasi tutta la competenza della gestione alluvioni e comunque degli eventi è passata ai comuni. Quindi noi facciamo coordinamento e lo facciamo anche tramite uffici territoriali che sono le provincie che comunque coordinano le zone di loro competenza. Quindi si è un po' allargato qui il sistema. Però questo cambiamento lo relazionerei alla finanziaria che ha modificato tutte le competenze, poi la regione cosa ha fatto, ha dato competenze alla difesa del suolo e ai comuni e quando va diciamo ripresa la difesa del suolo, ha ripreso la competenza su difesa del suolo quindi diritto sui grandi bacini mentre sui piccoli bacini ha dato la competenza ai comuni che prima non avevano. Prima la provincia faceva tutti i corsi d'acqua esclusi quei canali che venivano considerati fognature bianche che potevano anche essere piccoli impluvi ma non avevano caratteristiche di corsi d'acqua, adesso invece molta parte del territorio è passato di competenza ai comuni che hanno anche competenza sull'intervento, quindi la gestione emergenza è praticamente dei comuni.

R: Come è stato modificato il numero di sanzioni per mancata o incompleta ottemperanza degli obiettivi dettati dal decreto?

I: Io non credo ci siano sanzioni a livello regionale. Su scala provinciale no. Su scala regionale non mi sembra

Appendix "G" Chapter 4-5

Civil servant Regione Liguria interview, the subject was at the head of a team of engineers and it was referred to in the text with "interviewed n°4".

suo avviso, come gli accordi governativi in relazione alla gestione del rischio alluvioni hanno influenzato la possibilità di rischio alluvioni in relazione al Decreto Lgs.

I: Nel senso.. se hanno ridotto il rischio? Mah non mi sembra abbia avuto una grande influenza appunto.. nel senso che in Italia ed in particolare in Liguria perché noi abbiamo una lunga storia in pianificazione di bacino. Siamo stati la prima regione a fare il piano di bacino in Italia che è quello del torrente Chiaravagna e quindi chiaramente la Direttiva non ha introdotto delle grandissime differenze rispetto alla progettazione di bacino. Quindi.. (esitazione) C'è da dire che effettivamente il Decreto ha un valore aggiunto rispetto ai piani di bacino (L. 183) che è quello della protezione civile che è quella della gestione del rischio. Perché la direttiva in effetti, ha tentato di mettere la insieme le due cose; la parte di pianificazione che è rivolto al futuro e quella della protezione civile che è di fare nel mentre. Questo potrebbe essere un valore aggiunto in più che però per come è stata attuata al momento non ha avuto grande effetto perché queste due parti sono rimaste piuttosto separate, anche a livello nazionale. A livello nazionale il dipartimento di protezione civile ha comunque fatto delle linee guida per dire che questo piano è fatto da una parte A ed una parte B addirittura e che quindi come già dice la parola vuol dire che non sono perfettamente integrati però in questo senso potrebbe diminuire il rischio alluvioni perché se mettiamo insieme diciamo la conoscenza del pericolo e il fatto che la protezione civile si possa gestire il pericolo.

R: Quindi qual è il cambiamento percepito in tal senso, in generale?

I: Dove secondo me è aumentata la percezione del rischio sono stati gli eventi alluvionali, ci sono state due grandi alluvioni negli anni passati che hanno avuto grandi conseguenze anche a livello penale e quindi processi ect e questo secondo me ha cambiato un po' e quindi anche i comuni sono molto più attenti, e secondo me è questo che ha cambiato la percezione. Quindi i comuni si sono gestiti, si sono fatti più studi più interventi. Per la direttiva alluvioni in sé non vedo questo grande cambiamento. Fino a qualche tempo fa si pensava che i nostri studi fossero ipotetici, non so come dire, utopici. Tutti dicono non succederà mai, fanno la duecentennale e poi.... L'abbiamo visto due volte di seguito. Genova ha chiesto i finanziamenti e fatto progetti. Credo che le persone a quel punto ci pensano.

R: Come questi ultimi, hanno influenzato la possibilità di potenziali conseguenze derivanti da eventi alluvionali?

I: La stessa cosa che ho detto prima, chiaramente è più conosciuto il rischio e cosa fare quindi in un certo senso è diminuito il rischio. Ma questo non tanto per la Direttiva, perché la Direttiva ha messo insieme due cose che esistevano già, perché come ho detto fin dall'inizio, la direttiva veramente ha questo valore aggiunto, da una parte pianifico e dall'altra devo fare protezione civile, ma dire in modo esplicito che il punto di congiunzione fra queste due attività sono

le stesse mappe, sono il quadro conoscitivo è fondamentale, perché qui in Liguria lo facevamo già ma so di regioni che la protezione civile si faceva le sue mappe e le autorità di bacino le sue. Quindi secondo me il dire che questo è appunto il punto chiave è stata la grossa novità. Penso che in questa fase l'attuazione ancora non ci sia stata. Però anche questo sì, un pochino ha influenzato. Non posso dire che il Decreto non sia servito a nulla.

R: Come è cambiata la routine di gestione del rischio alluvioni in Liguria in relazione al Decreto 49?

I: L'arrivo delle provincie è arrivato nel 2015 quindi diciamo che siamo ancora in rodaggio, solitamente queste ex provincie svolgevano attività autorizzative e non tanto di gestione del rischio immediato, so che adesso di nuovo come protezione civile gli stanno dando delle competenze perché sono sul territorio però non so fino a che punto.. un po' è cambiata la routine. Nella pianificazione di bacino non è cambiata per niente perché praticamente noi abbiamo fatto per scelta dei piani di rischi alluvioni che prendevano i piani di bacino che già abbiamo che vanno molto nel dettaglio, quindi nel quadro conoscitivo non c'è stato un cambiamento particolare. Sulla parte protezione civile non so se effettivamente i colleghi hanno cambiato il sistema di allertamento piuttosto che altro, e quindi si potrebbe dire che in relazione al decreto è cambiato il sistema di allertamento. Quindi un po' forse nella gestione del rischio forse il decreto ha influito. Insomma un po' è migliorato

R: Come questo cambiamento ha influenzato i piani di gestione del rischio alluvioni a livello di tempistiche d'attuazione e nel design?

I: Al momento niente perché abbiamo fatto il piano alluvioni che è stato approvato nel 2016 e questo potrebbe aver influenza per il prossimo PGRA che è previsto nel 2018

R: Come sono stati cambiati i ruoli delle istituzioni pubbliche riguardanti il recupero socio territoriale conseguente ad un evento alluvionale dal Decreto legislativo 49?

I: I ruoli secondo me non sono cambiati perché dipendenti dalle leggi. Forse è cambiata un po' la consapevolezza ma i ruoli no. Leggermente si è cambiato il ruolo delle regioni nei rapporti con la protezione civile nel senso che c'è stato un problema su chi dovesse dare l'allerta ect ed è stata la competenza ai comuni piuttosto che la regione. Secondo me è cambiato molto poco anche questo perché grosso modo le competenze sono rimaste le stesse, ecco invece i metodi..

R: In relazione al decreto 49 come sono cambiati i metodi di studio delle criticità funzionali delle istituzioni per la gestione del rischio alluvioni?

I: Forse sui metodi un po' di più sì, nel senso che nei ruoli bene o male chi e cosa faceva prima è rimasto lo stesso, forse invece nel metodo..

R: mi è stato accennato una variazione importante nel metodo di studio delle criticità quello dell'analisi costi benefici..

I: No, noi non lo abbiamo mai fatto, no cioè non lo usiamo.. noi usiamo l'analisi del rischio residuale e che anche lì più che del rischio noi parliamo del pericolo residuale perché siamo sempre centri urbani ed andiamo a vedere il pericolo. Noi quello lo facciamo abbastanza per gli interventi, ma non andiamo a fare un'analisi costi benefici perché se lo facessimo ad ogni singolo intervento per esempio su case, ci converrebbe ricomprare delle case piuttosto che altro. Un'analisi di quanto sia raggiungibile un certo grado di sicurezza lo facciamo, anzi credo che siamo stati abbastanza innovativi in tal senso. Utilizziamo il franco idraulico come standard da vedere se riusciamo a raggiungerlo con il livello di sicurezza richiesto dalla norma. Però ecco diciamo che un valore del capire le valutazioni preventive, nel senso che quando facciamo un progetto definitivo è possibile approvare la mappatura di quelli che saranno gli interventi quando richiesto da un comune ed in questo senso oramai è abbastanza di routine che anche quando non abbiamo il franco di legge andiamo a valutare con metodi più o meno empirici, tramite l'utilizzo di scenari capire se questa mancanza di franco può comportarmi delle conseguenze.

R: Come è cambiato il processo di gestione del rischio alluvioni in relazione a riconoscimenti di potenziali rischi futuri conseguentemente al Decreto 49?

I: sì ecco, su questo punto abbiamo un pochino migliorato, siamo sempre lì non è che sia conseguente al decreto perché noi lo facciamo in linea con i nostri piani di bacino. Perché sì, abbiamo fatto il PGRA, però questo, ha recepito il quadro conoscitivo dei piani e quindi la cosa specifica viene ancora attuata col piano perché il PGRA non è una normativa, ha un po' tutti questi indirizzi quindi non è che sia successo con il decreto legislativo, però negli anni utilizziamo un po' tutte questi metodi di riconoscimento dei rischi più cauti e aggiornati. Questa cosa qui va avanti in evoluzione dal 1999, ultimamente che abbiamo fatto uno studio sul bisogno stiamo spingendo verso l'utilizzo del franco e di uno studio molto più di dettaglio. Quindi la situazione sta cambiando.

R: In relazione al Decreto 49 come è cambiata la concessione di spazio per l'impiego di nuove tecniche per diminuire o lenire le conseguenze date da eventi alluvionali?

I: Al momento no secondo me, allora nel piano nostro, allora noi come bacino siamo piccoli, siamo due distretti nel senso che ci sono tre autorità di bacino, nazionale inter-regionale e noi siamo quella regionale quindi noi parliamo di quello regionale perché è di mia competenza ed è l'area più vasta. Per esempio appunto cosa che abbiamo messo nel PGRA è stato l'assegnare spazi a nuove tecniche per trasporto solidi e recupero fluviale, cose che ancora un po' ci mancano ma le abbiamo messe però lì ma non c'è nessuno spazio per quello. Tuttavia abbiamo finanziato uno studio di equilibrio morfodinamico sulla parte padana e a Dicembre siamo riusciti ad assegnare una certa cifra ed è abbastanza nuovo perché questo studio del piano dei sedimenti è stato inserito nel 2015 e possiamo dire che è una conseguenza del Decreto 49. Quindi qualcosa si è mosso come gli studi bidimensionali che prima eran solo monodimensionale. Poi lenire danni, mah... perché anche lì le nostre normative in realtà.. questa gestione del rischio dovrebbe avere due parti pianifico guardando al futuro dicendoti cosa non devi fare e poi allo stato attuale che cosa devo fare dove ho la protezione civile che dice scappa o chiudi quella strada, non andare lì. Per esempio lì qualcosa è cambiato per questo, l'industria ha dei finanziamenti per mettere le paratie mobili per le protezioni per il singolo bene. Tutto però molto in relazione con gli eventi alluvionali.

R: Come sono cambiate le tempistiche di revisione dei piani di gestione del rischio in relazione ad informazioni sul cambiamento climatico in successione al decreto legislativo 49 del 2010?

I: Mah.. cambiamento climatico noi non lo abbiamo preso proprio in considerazione. Anche perché con l'utilizzo della pericolosità residua rispetto ai franchi funziona per calcolare se la portata aumentasse. Per quel poco che avevamo noi non abbiamo delle evidenze che questo cambiamento in realtà aumentasse le portate stimate. Noi progettiamo e valutiamo tutto sulla portata duecentennale che anche abbastanza alta. E quindi questo cambiamento climatico al momento noi non abbiamo fatto niente. Su questa cosa delle alluvioni in realtà non è che abbiamo fatto degli studi, però aver valutato l'effetto degli eventi questo sì, l'abbiamo fatto, abbiamo cercato di stimare il livello di portata. Tutte le aree non classificate come inondabili le abbiamo integrate comunque dentro il piano aree ad altissimo rischio.

R: a vostro avviso come è cambiata la gestione di risorse di istituzioni responsabili per la gestione del rischio alluvioni in relazione al decreto legislativo 49 del 2010?

I: Io direi niente, anzi siamo sempre gli stessi.

R: Come il decreto 49 del 2010 ha influito sui piani di gestione del rischio a livello progettuale, qui si chiede se vi è un cambiamento a livelli di settorializzazione o integrazione.

I: Sempre settoriale, non ha influito significativamente.

R: in relazione al decreto, come è cambiata l'efficienza del processo decisionale delle istituzioni responsabili della gestione del rischio alluvioni?

I: Per il decreto, non lo so. Per quanto riguarda la pianificazione di bacino, che è mia competenza non so, può darsi che in protezione civile qualcosa loro abbiano cambiato però per quanto riguarda noi non mi sembra

R: Come, successivamente al decreto, è cambiata la capacità di raggiungimento di obiettivi dettati dallo stesso delle istituzioni responsabili per la gestione del rischio alluvioni?

I: Mah.. anche lì con le nostre storie normative passate non ha aggiunto molto. C'è da dire che ci ha costretti ad mettere insieme tutti i dati. Ci ha costretti a vedere per esempio la parte padana con cartografie di sintesi che non avevamo, ci ha costretti a calcolare il rischio con lo stesso metodo. Quindi un po' ha influenzato però non è che ci ha cambiato radicalmente, perché purtroppo forse l'abbiam presa come un adempimento. Forse alcune cose che erano più spezzettate le abbiamo messe insieme come per esempio calcolare le classi di rischio che noi prima in ogni piano ed in ogni bacino facevamo diversamente le abbiamo uniformate e questo è un valore aggiunto perché le abbiamo tutte graduate nella stessa scala. Quindi qualcosina ci ha costretti a fare. Però nel giro di qualche mese questo potrebbe anche cambiare

R: Come è cambiato il rapporto d'interesse dell'istituzione responsabile di gestione del rischio alluvioni in relazione agli obiettivi dettati dal decreto

I: Mah, boh...non lo so non lo riesco vedere tanto legato al 49 perché il 49 ricalca le competenze che già cerano, come per esempio la protezione civile ribadisce le competenze della ragione tra l'altro e quindi non saprei dirle bene che obiettivi nazionali abbia dato... io lo vedo poco.

R: Come sono cambiati i ruoli delle istituzioni per l'implementazione fisica degli interventi previsti dal piano di gestione alluvioni conseguentemente al decreto

I: sempre per la parte più verso la parte di pianificazione di bacino, rimane invariato, poi potrebbe esserci qualcosa dalla parte della protezione civile. Non lo so.

R: Come è stato modificato il numero di sanzioni per l'istituzione responsabile per l'implementazione del decreto in caso di mancata od incompleta ottemperanza degli obiettivi nazionali sanciti dal decreto? Come influisce quindi il livello nazionale sopra quello regionale.. come l'uno monitora l'altro ect.

I: L'unica cosa che hanno fatto è che nella parte di finanziamento degli interventi quelli a livello statale adesso utilizzano mappe di rischio fornite da livello statale e quindi in questo senso potrebbe avere un senso di meritocrazia legato al lavoro della ragione nel provvedere completezza nei dati. Però poi, da quanto mi dicono i colleghi poi alla fine hanno fatto una tabella di ripartizioni di fondi legata alla superficie abitata con qualche correttivo ma molto piccolo. Anche qui, il ministero avendo questo decreto e avendo queste mappature, invece che riferirsi alle mappature dei piani loro si riferiscono a queste qui, le mappature delle direttive alluvioni e quindi secondo me lo stato ha dato un ruolo a questa cosa, poi per noi Liguria di fatto, essendo praticamente coincidenti non ha portato questa grande differenza. Ecco io numero di sanzioni non ne ho viste.

R: Come è cambiata l'accessibilità per soggetti esterni al processo di elaborazione dei piani di gestione alluvione in successione al decreto 49 del 2010?

I: Questo forse un minimo di obbligo sulla pubblicità ce le abbiamo avute. Allora anche da noi sui i piani di bacino è tutto pubblicato come sempre però non c'è mai stato un alto tasso di partecipazione però abbiamo fatto qualche convegno che prima non facevamo. Però un po' quello c'è stato, infatti abbiamo dovuto fare qualche cosa.. queste parte di condivisione era obbligatoria, abbiamo dovuto farla e poi alla fine effettivamente un po' è servita, come la partecipazione della prefettura e della provincia. io questa cosa qui direi che è migliorata anche se poi magari è più formale che sostanziale. Secondo me questa cosa qui sulla popolazione civile non ha avuto effetto perché la gente continua a fare capo alla progettazione di bacino perché abituata siccome conosce dov'è e cos'è. Noi siamo stati sempre un po' più prescrittivi invece che descrittivi come funziona in altri distretti ed è sempre stato nella nostra cultura, quindi noi non vorremo perderla questa parte. Secondo me la direttiva alluvioni è stata vista un po' come posticcia cioè appiccicata lì sopra che ha portato cambiamento forse un po' a livello formale ma non a livello sostanziale. L'unico valore che aveva persè era di integrare la protezione civile con l'ente tecnico ma al momento nel piano ci sono le due parti ma non sono integrate a mio avviso.

R: Come il decreto ha influenzato l'istituzione responsabile nell'adattamento della stessa nel perseguimento di obiettivi preposti

I: già noi nella legge che abbiamo fatto nel 2009 dove le province avevano responsabilità sulla gestione alluvioni ma tuttavia avevamo già unificato i comitati tecnici i quali nella transizione dovuti alla direttiva sono rimasti gli stessi. Quindi il percorso di unificazione è partito prima della direttiva. Mentre invece prima del 2009 le province erano molte più autonome, dal 2009 in poi invece è avvenuta una grossa unificazione. Quindi anche in questo senso che queste province sono diventate regioni non c'è stato un grandissimo impatto, ma paradossalmente c'è stato più impatto nell'anno precedente al decreto mentre nell'anno del decreto la parte tecnica veniva già condivisa. Noi avevamo quattro province che erano diventate quattro repubbliche. Quello che è cambiato con il comitato che era regionale è che dava pareri vincolanti con l'intento di avvicinare le province, questo non è successo perché ogni provincia aveva le sue prassi e quindi diciamo che ci vuole ancora tempo perché tendiamo ad avere molte sovrapposizioni. A volte è ancora difficile il rapporto interno per l'unificazione degli uffici per esempio della difesa del suolo, e che quindi non si capisce quando inizi e finisca la competenza di un ufficio. Ora che è più paritaria è più difficile per tutti per avere decisioni consensuali.

Appendix "H" Chapter 4-5

Civil servant Regione Liguria interview, the subject was an engineer and it was referred to in the text with "interviewed n°5".

R: Possiam partire? È pronto?

I: Cenno affermativo con la testa.

R: Come a suo avviso gli accordi governativi in relazione alla gestione del rischio alluvioni abbiano influenzato la possibilità di rischio alluvioni successivamente al decreto?

I: Secondo me poco. Gliela giustifico. Secondo me in Liguria avevamo già una pianificazione di bacino che individuava già sia la pericolosità quindi la possibilità di rischio alluvioni sia il rischio, quindi secondo me la direttiva alluvioni per la Liguria non ha portato grossi cambiamenti. Quindi direi che non c'è stato un decremento né aumento della possibilità di rischio.

R: Come a suo avviso gli accordi governativi in relazione alla gestione del rischio alluvioni hanno influito sulle conseguenze derivanti da eventi alluvionali in successione al decreto?

I: Quindi sempre gli accordi governativi legati alla direttiva alluvioni? Eh anche in questo caso io direi che sono connesse, legate.. quindi come prima.

R: Come è cambiata la routine di gestione alluvioni in Liguria in relazione al decreto?

I: Secondo me anche in questo caso sono cambiate poco.

R: come in successione al decreto sono stati influenzati i piani di gestione a livello di tempistiche di revisione dei piani e nel design?

I: Allora, col design si intende l'organizzazione e progettuale? In realtà anche questo direi che non è cambiato nulla

R: Come sono stati cambiati i ruoli delle istituzioni pubbliche riguardanti il recupero socio territoriale successivo all'accadimento di evento alluvionale in successione al Decreto?

I: C'è stata una transizione di competenze nel 2015 della provincia alla regione ma questo è dovuto a un meccanismo interno. Adesso sono subentrati i distretti in questi giorni, quindi neanche più le autorità di bacino regionali, per cui forse il cambiamento è ancora da vedere. Anche in questo caso non vedo grandi cambiamenti portati dalla direttiva alluvioni. Io parlo sempre per la Liguria però perché magari per altre regioni.. I ruoli pubblici sono rimasti sempre quelli tranne per questa transizione provincia regione regione distretto che comunque non è legato direttamente alla direttiva alluvioni ma è legata ad una ristrutturazione della pubblica amministrazione.

R: In relazione al decreto come sono cambiati i metodi di studio di criticità funzionali dell'istituzione responsabile per la gestione del rischio alluvione?

I: Qui secondo me invece c'è stato un cambiamento nel senso che è cambiato leggermente la metodologia per l'individuazione del rischio che nella pianificazione di bacino previgente, e vigente ancora, era individuata in un certo modo senza particolare attenzione agli elementi puntuali tipo scuole, cose che invece la direttiva alluvione ha messo in luce. Quindi anche in termini di popolazione esposta al rischio che è un tema affrontato nella direttiva alluvioni che invece nella pianificazione di bacino non figurava. Quindi qualcosa è cambiato

R: in relazione al decreto legislativo come è cambiato la distribuzione di spazio per la sperimentazione di nuove tecniche per lenire conseguenze derivanti da eventi alluvionali?

I: Eh.. non lo so questo direi.

R: come sono cambiate le tempistiche di revisione dei piani in relazione al decreto legislativo?

I: Direi in nessun modo nel senso che il piano di gestione del rischio so che è stato adottato ma non so poi se siano presenti dei piani di aggiornamento. I piani di bacino avevano un aggiornamento più o meno costante nel senso che comunque dal territorio ci venivano delle richieste di aggiornamento per i lavori svolti e per altre realtà e anche per uffici ogni 10 anni più o meno facevamo degli aggiornamenti. Poi per sapere questo bisognerebbe consultare il PGRA che per il versante padano è stato adottato e per il versante ligure tirrenico non so.

R: Come è cambiato il processo di gestione alluvione in relazione a potenziali rischi futuri in relazione al decreto legislativo?

I: Allora, questo potrebbe essere cambiato nel senso che diciamo è stato introdotto la questione dei cambiamenti climatici nella valutazione del rischio cosa che invece nei piani di bacino non è mai stata presa in considerazione. Sono contenute indicazioni in relazione all'aumento potenziale del rischio sebbene non sia ancora chiaro come valutarlo. Però diciamo che ha introdotto il tema del cambiamento climatico che potrebbe portare un peggioramento della pericolosità, quindi interventi più intensi. Quindi c'è un impatto formale e sostanziale sulla pericolosità reale.

R: A vostro avviso come successivamente al decreto è cambiata la gestione di risorse dell'istituzione responsabile per la gestione del rischio?

I: Secondo me qui in Liguria non è cambiato nulla sotto questo punto di vista.

R: Come il decreto legislativo ha influenzato a livello progettuale sulla gestione del rischio alluvioni in termini di settorializzazione e integrazione?

I: Eh anche qui, per quanto ne so io, a livello di interventi non è cambiato forse nulla, potrebbe aver forse spinto verso un'integrazione, cioè la multisettorialità di intervento e non affrontare più solo il punto di vista prettamente idraulico ma un approccio un po' più integrato nel senso che posso tollerare un rischio residuale ma con misure di protezione civile ed in effetti sulla protezione civile potrebbe esserci stato un bel cambiamento

R: Come conseguentemente al decreto è cambiata l'efficienza del processo decisionale dell'istituzione responsabile per la gestione del rischio alluvioni?

I: Direi che non è cambiato in nessun modo nella Liguria.

R: Come il decreto ha influenzato la capacità dell'istituzione responsabile per la gestione del rischio alluvioni nel raggiungimento degli obiettivi dichiarati dalla direttiva stessa?

I: Eh, Mah, Direi (esitante) non lo so, non lo so nel senso che io gli obiettivi della direttiva alluvioni non so perfettamente quali siano, e non c'è una linea guida particolare a livello statale.

R: Come è cambiato il rapporto di interesse dell'istituzione responsabile di gestione del rischio alluvioni in relazione agli obiettivi del decreto in successione dell'emanazione dello stesso?

I: Direi che non è cambiato è tale quale a prima. Diciamo che quello che prima faceva la provincia ora lo fa l'ufficio territoriale della regione che però, non si chiama più provincia ma fa le stesse cose di prima quindi in sostanza non è cambiato niente. In realtà c'è un ente di meno e quindi forse dovrebbe essere più snello il tutto, la procedura è solo un po' più macchinosa.

R: Come sono cambiati i ruoli delle istituzioni responsabili per l'implementazione fisica degli interventi per la gestione del rischio alluvioni in successione al decreto?

I: Non sono cambiati, sono sempre gli stessi. Conseguentemente alla direttiva almeno, non è cambiato nulla. In questi giorni è stata riorganizzata la struttura interna dell'organizzazione formando un ufficio che si occupa della gestione degli interventi pubblici, però è un ufficio che è ancora da popolare, diciamo che c'è una maggiore attenzione al tema, però non è legato alla direttiva perché in Liguria eravamo già allineati con le indicazioni della direttiva stessa.

R: Come sono state modificate il numero di sanzioni per le organizzazioni responsabili per mancato ottemperamento degli obiettivi preposti dalla direttiva alluvioni a livello nazionale o regionale?

I: Non ho idea di come funzionino i sistemi di monitoraggio a livello nazionale su scala regionale.

R: Come è cambiato il livello di accessibilità per soggetti esterni alla elaborazione dei piani per la gestione del rischio alluvioni successivamente al decreto?

I: Anche qui direi che non c'è un cambiamento legato direttamente alla direttiva. Tutti i piani sono pubblicati, massima trasparenza. Cercavamo di pubblicare documenti da prima il più possibile e abbiamo fatto lo stesso con la direttiva. Più si pubblica e meno gente ti viene a chiedere le cose, più gente le conosce meglio è.

Appendix "I" Chapter 4-5

Civil servant Regione Liguria interview, the subject was an engineer and it was referred to in the text with "interviewed n°6".

R: A suo avviso, come gli accordi governativi relativi alla gestione del rischio alluvione hanno influenzato la possibilità di rischio alluvioni successivamente al Decreto?

I: Questo insomma.. rispetto alla pianificazione di bacino?

R: Esatto

I: A mio avviso non molto, nel senso che avendo già preso quello che era nei vigenti piani di bacino non ha cambiato molto le cose per quanto ne so io.

R: A suo avviso, come gli accordi governativi relativi alla gestione del rischio alluvione hanno influenzato le conseguenze derivanti da eventi alluvionali successivamente al Decreto?

I: Su questo secondo me poco, proprio per il fatto che è poco diversa la mappatura

R: Come è stata cambiata la routine di gestione del rischio alluvioni in Liguria successivamente al decreto legislativo?

I: (Pausa) Questo non lo so

R: Come questo cambiamento ha influenzato il piano di gestione di rischio alluvioni a livello di tempistica d'attuazioni dei piani e nel design?

I: Non lo so

R: Come sono stati cambiati i ruoli delle istituzioni pubbliche riguardanti il recupero socio-territoriale conseguente ad un evento alluvionale

I: (risata) non lo so..

R: Non c'è problema..

R: Come sono cambiati i metodi di studio delle criticità funzionali dell'istituzione responsabile per la gestione del rischio alluvioni?

I: non lo so, non mi sono occupato io di queste cose

R: Come è cambiato la distribuzione di spazio per nuove tecniche di sperimentazione per prevenire o lenire elementi di carattere alluvionale successivamente al decreto?

I: Non lo so, vada avanti.. sull'omertà

R: Come sono cambiate le tempistiche di revisione dei piani in relazione ad informazioni aggiunte sul cambiamento climatico in successione al Decreto legislativo?

I: Non lo so..

R: Come è cambiato il processo di gestione del rischio alluvioni in relazione al riconoscimento di potenziali rischi futuri in successione al decreto?

I: Da quanto ne so io non sono cambiate grandemente le cose, quindi anche qui secondo darei un valore minimo al grado di cambiamento percepito.

R: a vostro avviso, come è cambiata la gestione di risorse dell'istituzione responsabili per la gestione del rischio alluvione?

I: Le risorse vengono utilizzate ugualmente a come venivano utilizzate precedentemente al Decreto. Anzi, paradossalmente adesso che la gente è andata in pensione c'è meno personale. Quindi c'è un cambiamento nella gestione di risorse nel senso che sono diminuite ed è peggiorato il livello di gestione, tuttavia non credo sia da relazionare al decreto.

R: Come il decreto ha influito sui piani di gestione del rischio a livello di integrazione o settorializzazione in successione al Decreto Legislativo?

I: Non lo saprei.

R: Come, in successione al decreto è cambiata l'efficienza del processo decisionale delle istituzioni responsabili per la gestione del rischio alluvioni?

I: non saprei, mi spiace la abbiano indirizzata a me perché non saprei come rispondere a queste domande.

R: Come il decreto ha influenzato la capacità dell'istituzione responsabile di raggiungere gli obiettivi dettati dalla direttiva e come è stato influenzato l'interesse nel raggiungimento di tali obiettivi da parte dell'istituzione responsabile?

I: Non ne avrei idea, io mi occupo di aspetti più tecnici.

R: come sono cambiati i ruoli per le organizzazioni responsabili per l'implementazione degli interventi in successione al decreto legislativo?

I: umh.. non saprei, ed il numero di sanzioni per carità!

R: come è cambiata l'accessibilità da parte di soggetti esterni al processo di elaborazione dei piani di gestione del rischio alluvioni in successione al decreto?

I: Accessibilità al processo di elaborazione? Non saprei dirlo, mi spiace ma non ne so niente.

R: A questo punto, a suo avviso come la direttiva alluvioni ha influito sulla regione Liguria?

I: No, un lavoro che era stato fatto e richiesto dalla direttiva alluvioni era quello proprio della quantificazione di livello di rischio nelle diverse aree inondabili cosa che nei piani di bacino non era presente perché io sapevo quale era l'area cinquantennale centennale duecentennale e cinquecentennale ma sapevo quale zone erano a rischio più elevato e a rischio meno elevato ma a parità di livello di rischio, R 4 diciamo, massimo livello di rischio, non sapevo quale zona contenesse il maggior numero di elementi a rischio. Gliene dico un'altra. Se in una zona c'erano due case ed in una zona c'erano cinquecento case, erano tutte e due R 4. Con la direttiva alluvioni è stato fatto un lavoro in più sulla base dei livelli informativi del database regionale ed in particolare è stato fatto il conto di quanti edifici ricadevano all'interno delle aree inondabili e sulla base delle carte censuarie una stima della popolazione ivi residente. Per cui io zona per zona ho modo di distinguere qual è l'R4 che è la zona di maggior rischio in termini di numero di residenti e di numero di edifici presenti. Quindi una maggiore modulazione del calcolo di valutazione del rischio. E adesso stiamo cominciando ad usare queste informazioni che poi sono state calcolate anche sulle frane, le stiamo usando per interventi di difesa del suolo. Quindi io vado a scegliere prima le aree con la maggior percentuale di rischio.

R: Ha questo appesantito il processo di routine della regione ?

I: Si è fatto un lavoro in più, però è un lavoro utile. Direttamente non ha pesato sul processo di routine, mentre indirettamente, visto che la soppressione delle province ha causato anche tutta una serie di conseguenze sulla filiera amministrativa, per cui prima determinate cose che erano di competenza della regione seguivano un determinato iter come ad esempio la programmazione degli interventi che passava prima dalla provincia, non essendoci più quello step lì chiaramente abbiamo dovuto anche cambiare i criteri e le linee guida facendoci carico noi di quello che prima erano competenze della provincia. Nel fare questo ci siamo dati dei criteri che discendono dal fatto di quello che dicevo prima, negli interventi, prima faceva la provincia ora facciamo noi e quindi che criteri mi do? Abbiam pensato di dare anche questo cosa qui. Questo potrebbe essere un impatto ma positivo.

Appendix "J" Chapter 4-5

Civil servant Protezione Civile Provincia interview, the subject had a role of spokesman and it was referred to in the text with "interviewed n°7".

R: Come a suo avviso gli accordi governative presi in successione al Decreto legislativo hanno influenzato la possibilità di rischio alluvione?

I: Allora, questo decreto non è che ci riguardi tanto noi come ente perché più che altro sono le regioni che pianificano ad un livello più alto. Noi ne prendiamo atto e ci regoliamo di conseguenza. Cioè noi nei nostri piani non cambia molto, noi i nostri piani li abbiamo stilati e sono abbastanza adeguati a quello che dice il decreto. Senz'altro è una cosa positiva perché aiuta a prevenire.. la nostra è una piccola fetta del decreto che è quella della protezione civile.

R: Questo ruolo della protezione civile riguardante al decreto è una risultante di una riassegnazione di competenze o non è cambiato nulla?

I: è sempre stato così non è cambiato nulla

R: Per quanto riguarda la routine di gestione del rischio? Ha subito cambiamenti in relazione al decreto legislativo?

I: No è rimasta sempre la stessa, noi non abbiamo cambiato il modo di svolgere le nostre competenze.

R: in relazione al decreto come sono cambiati i metodi di studio delle criticità funzionale dell'istituzione responsabile alla gestione del rischio alluvioni?

I: Non abbiamo cambiato nulla nella struttura della protezione civile, non so i colleghi della regione.

R: Come è cambiato il processo di gestione del rischio alluvioni in relazione al riconoscimento di rischi potenziali futuri in conseguenza al Decreto Legislativo?

I: Beh.. abbiamo adeguato in base alle aree che sono più a rischio, i nostri piani e sono sempre in evoluzione in base alle valutazioni del rischio specifico, per esempio se noi troviamo più persone esposte rischio in un'area piuttosto che un'altra modifichiamo il piano o creiamo ordinanze o creiamo attività di prevenzione come possono essere quelle che.. per esempio noi stiamo facendo un lavoro sulla messaggeria vocale. Una volta individuato il rischio si individuano le persone maggiormente esposte e gli si propongono degli interventi come quelli della messaggeria vocale ovvero, quando c'è una situazione di pericolo o preallarme li si avvisa dicendo, guardate che c'è questo rischio, state attenti oppure se c'è l'evento in corso, allontanatevi. Questo quindi è cambiato in conseguenza di tutto non solo il decreto. Nel decreto, dove vengono anche stabilite le valutazioni del rischio, proprio i parametri per la valutazione del rischio, questo senz'altro questo ha influito sì.

R: A suo avviso come è cambiata la gestione di risorse da parte delle istituzioni responsabili per la gestione del rischio alluvioni?

I: Per noi qua come comune è identica, non è cambiata.

R: come conseguentemente al decreto è cambiata l'efficienza del processo decisionale in merito alla gestione del rischio alluvioni?

I: Ha cambiato poco, perché chi.. questo decreto lavora più in grande stile più a livello regionale. Noi nello specifico del rischio lo sappiamo è sempre quello.

R: come a suo avviso il decreto ha influenzato la capacità dell'istituzione responsabile per la gestione di rischio alluvioni di raggiungimento degli obiettivi preposti dal decreto stesso?

I: Beh.. loro diciamo.. dal loro punto di vista hanno fatto dei grossi passi in avanti perché il fatto di stabilire le aree esposte non solo alluvioni ma anche alla mareggiate come segnalazione del pericolo anche per un discorso dal punto di vista marittimo costiero è stato sicuramente un passo avanti. Se non altro da un punto di vista di presa di conoscenza dello stato del territorio, sia dei fiumi che dei mari, però ha aiutato molto. Il piano di bacino è stato molto perfezionato, per esempio la suddivisione in zone dei bacini prima non c'era, era molto più approssimativo. Secondo me sono riusciti ad essere molto più dettagliati nella descrizione del territorio e quindi anche nelle specifiche di rischio. Più si va ad ingrandire le aree più si riesce ad essere precisi.

R: Il decreto ha influenzato questa organizzazione anche per quanto riguarda la metodica di azione?

I: quella nostra assolutamente no, penso la regionale sì

R: Come è cambiato il rapporto di interesse dell'istituzione responsabile in relazione al perseguimento degli obiettivi preposti dalla direttiva?

I: Poco. La transizione avvenuta nel 2015 di competenze dalla provincia alla regione non ha cambiato molto i nostri ruoli. Quello che era la gestione provinciale dei bacini è senz'altro cambiato, per quanto riguarda noi però, nulla è cambiato.

R: Come sono cambiati i ruoli per l'implementazione fisica degli interventi in relazione al decreto?

I: Mah, non saprei.. però c'è da dire una cosa, ci riguarda come organizzazione. Proprio in base a queste valutazioni, tutti gli interventi che sono stati fatti sul Chiaravagna, sullo Sturla e sul Bisagno, probabilmente un po' di aiuto la direttiva l'ha dato. Perché individuate le aree a rischio con maggior specificità sono stati progettati, e stanno andando avanti degli interventi, tipo il canale scolmatore unico del ferreggiano, degli interventi che saranno fondamentali nella mitigazione del rischio e della prevenzione. Quindi tornando alle prime due domande, sulle conseguenze del rischio e la possibilità di rischio, si può desumere che in realtà siano entrambe diminuite. Si tuttavia dovranno essere finiti i lavori, comunque qualche passo è stato fatto.

R: Come è cambiata l'accessibilità per soggetti esterni all'elaborazione dei piani in relazione al decreto legislativo?

I: noi abbiamo qualche convenzione con soggetti esterni, tipo la fondazione CIMA, diciamo che abbiamo un rapporto di collaborazione, però ecco, bisognerebbe vedere al di fuori, nelle organizzazioni di gestione più grandi.

R: Come a suo avviso l'emissione del decreto legislativo ha impattato questa organizzazione di gestione del rischio alluvioni?

I: è stata importante perché ha evidenziato una volta di più la presenza del rischio. In più tutti i lavori di prevenzione e tutte le attività. Basti pensare che tutti gli interventi che ho elencato prima, sono tutte cose che sono nate in conseguenza al decreto, hanno preso vigore e stanno andato avanti, quindi è fondamentale la presenza di questo decreto anche se senz'altro deve essere sviluppato ulteriormente per poter usufruire a pieno del potenziale.