

Land Use Planning and Disaster: A European Perspective From Spain

JULI PONCE*

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Abstract

The study deals with the role of EU and EU Member States in relation to disasters and land use planning. It considers how land use planning can evaluate and manage risks to avoid disasters, paying special attention to the European use of precautionary principle, sometimes explained with the sentence “Better safe than Sorry”. The analysis uses especially, but not only, the example of the Spanish legal system taking into account its inclusion in the more general EU legal system. The study also considers public responsibility in preventing disasters and possible consequences of maladministration when taking planning decisions, using real Spanish cases. Finally, the article explores the possibilities of planning as a tool to prevent disasters in relation to two specific areas: location of nuclear plants and new developments regarding the prevention of crime and terrorist attacks by means of urban planning (the so called *Crime Prevention Through Environmental Design*).

Key words

Law; land use; disasters; risks; Europe; S. XXI

Resumen

El estudio analiza el papel de la Unión Europea (UE) y los Estados miembros de la UE en relación con los desastres y la planificación del uso del suelo. Se describe cómo la planificación del uso del suelo puede evaluar y gestionar los riesgos para evitar desastres, prestando especial atención al uso europeo del principio de precaución, a veces resumido en la frase “Más vale prevenir que curar”. El análisis utiliza especialmente, pero no sólo, el ejemplo del sistema jurídico español,

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* PhD in Law, University of Barcelona. Catedrático Acreditado of Administrative Law, University of Barcelona. Member of the directive board of the Research Institute at the Faculty of Law, TransJus. Member of the European Group of Public Law (http://www.eplo.eu/index.php?option=com_content&view=category&layout=blog&id=61&Itemid=129). University of Barcelona. School of Law. Avgda. Diagonal, 684. 08034 Barcelona (Spain) jponce@ub.edu

teniendo en cuenta su inclusión en el sistema legal general de la UE. El estudio también tiene en cuenta la responsabilidad pública en la prevención de desastres y las posibles consecuencias de la mala administración cuando se toman decisiones de planificación, a través de casos reales españolas. Por último, el artículo explora las posibilidades de la planificación como una herramienta para prevenir desastres en relación a dos áreas específicas: la ubicación de centrales nucleares y los nuevos desarrollos en materia de prevención de la delincuencia y los atentados terroristas, por medio de la planificación urbana (el denominado *prevención del delito a través del diseño medioambiental*).

Palabras clave

Derecho; uso del suelo; desastres; riesgo; Europa; S. XXI

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1. Introduction

1.1. *Disasters and land use regulations: a possible cause, but also a possible mechanism for disaster prevention*

Natural and man-made disasters are a major European worry, due to their increasing frequency and severity and their impact on human life, destruction of economic and social infrastructures and damage to the environment. For example, according to an official European Union (EU) document, the economic impact of disasters in Europe has been estimated at €15 billion annually (European Commission 2009a, p. 4).

Land use law (*Derecho urbanístico*, in Spanish, or *Droit de l'urbanisme*, in French) deals with the regulation of land use. There is a clear relationship between the use of land and disasters. On one hand, the regulation of land can allow urban expansion by means of several instruments (plans, zoning), and urban expansion can bring intensive use of land, industrial development and construction of infrastructures which can be a factor in future disasters. A good example of this is urban pressure on rivers and flood risks (Spanish Government 2010a, p. 44).

But, on the other hand, the proper regulation of land can be a preventive tool of disasters, by preventing disasters from happening and by minimizing their impacts when disasters are unavoidable. That point of view has not been traditionally explored in depth by European jurisprudence (but see recently Association internationale de droit de l'urbanisme 2011). That is the perspective I want to study in this work. Therefore, this is a study with a *legal* and *European* perspective whose limited goal is to expose the *state of the art* of the current legal framework in relation to disaster prevention and reaction through land use law.

1.2. *Structure of this paper*

My study will be organized in the following way. In the first place, I will consider the role of the EU and EU Member States in relation to disasters and land use planning. Secondly, I will consider how land use planning can evaluate and manage risks to avoid disasters, paying special attention to the European use of the precautionary principle, sometimes explained with the sentence "Better safe than Sorry". In this analysis I will use especially, but not only, the example of the Spanish legal system taking into account its inclusion in the more general EU legal system.

Then, I will reflect on public responsibility in preventing disasters and possible consequences of maladministration when taking planning decisions, using a real Spanish case: the disaster at the *Biescas* Campsite. In that case affected people brought a lawsuit against public authorities claiming for compensation for damages caused by inappropriate planning.

Finally, I will explore the possibilities of planning as a tool to prevent and mitigate disasters in relation to two specific areas which are of great relevance nowadays. Firstly, I will consider the location of nuclear plants (with some comments on the importance of administrative procedures to protect fundamental rights as the German Constitutional Court decision *Mülheim-Karlich* has underlined). Secondly, I will study new developments regarding the prevention of crime and terrorist attacks by means of urban planning (the so-called *Crime Prevention Through Environmental Design*).

Disasters caused by crime and specifically terrorism are considered in the European sphere as man-made disasters. As a document of the Danish EU presidency in 2012 underlines "Member States are responsible for protecting their civilian populations. However, the EU can support and complement the Member States in their coordination before, during and after major natural and man-made emergencies, *including terrorism*" (Danish Presidency of the Council of the European Union 2012). CPTED shows that urban planning is a flexible instrument used for a wide

range of questions, including prevention of disasters caused by crime. It raises the question, again, of what happens in case of damages caused, at least partially, by a lack of enough planning design. The study will use the example of a real terrorist attack to show the Spanish legal response to that situation.

2. European Union and member states: distribution of powers and roles

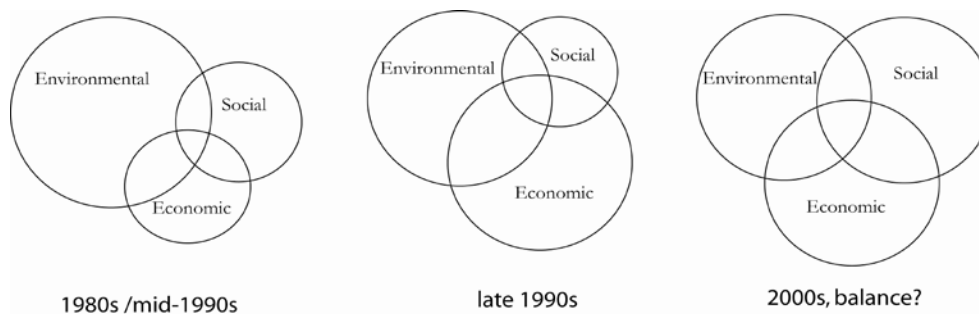
Although the EU has no powers in the field of land use planning, it can have an influence on national policy in several ways. On the other hand, although EU Member States are responsible for land use planning, they are bound by the EU legal framework and by the national constitutional distribution of legal powers. I will use the Spanish case to demonstrate this point

2.1. The European Union

The territory of the current EU occupies 4,324,782 sq km (less than half the size of the USA) (The World Factbook). The EU has a population of 492,387,344 (July 2010 est.) and a density of 112 inhabitants/Km² (compared to a density of 31 in the US) (Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat 2006). 75% of Europeans now live in urban areas and the figure is forecast to be 80% by 2020. Urbanization is spreading briskly, faster than urban population growth. It is estimated that the overall size of built up areas has grown by a fifth in the last twenty years, whereas the EU population increased by only 6%

The European model is a concept invoked during discussions concerning European integration. But what does it mean? Obviously it is a concept in development with clear political roots in an ongoing debate (Faludi 2007). Some opinions conceive of the EU as a free-trade area, ascribing the poor performance of the economy to the "soft" European model being invoked. Those opinions would like to see the role of European institutions being restricted to policing the Single Market. On the other side, other opinions consider this perspective close to the *laissez-faire* approaches of Anglo-Saxon liberalism, seeing the European model as the foundations of a just and competitive society and wanting strong European institutions to fulfill functions otherwise reserved to those of nation states. This second stream conceives the European model as a human order based upon a mixed economy, civilized labor relations, the welfare state and a commitment to social justice (Faludi 2007).

Scholars and practitioners debating European spatial planning and territorial cohesion policy in the EU also take this discussion into account. In any case, the EU legal framework (as interpreted by an impressive amount of official documents following international developments) considers sustainability as a key concept composed of three complementary parts: economic, social and environmental (European Commission 2007). In other words, it cannot be stated that a society is sustainable unless the three elements exist.



European concept of sustainability (Colantonio 2007, p. 4).

The CIA's *World Factbook* states that "The evolution of the European Union (EU) from a regional economic agreement among six neighboring states in 1951 to today's supranational organization of 27 countries across the European continent stands as an unprecedented phenomenon in the annals of history." Well...in any case, we should consider this unification as an ongoing (and difficult) process. The adventure started in 1957 and continues nowadays with a failed Constitution in 2004 and the late Treaty of Lisbon in 2007 which has changed the existing legal framework

It is important to underline that, according to this "constitutional" framework, the EU does not possess powers in the field of land use. However, as Italian professor CHITI underlines, the goals of sustainable development, solidarity, the fight against exclusion and economic, territorial and social cohesion lead to increasing intervention in relation to European cities. The EU also has powers in the fields of the environment and other public policies with territorial impact (e.g transportation), bearing in mind the *principle of subsidiarity* (that is, that matters ought to be handled by the lowest competent authority) (Chiti 2003).

Those related powers and the political will of taking into account territorial issues by means of the promotion of intellectual and public experiences networking (generating a huge amount of reports, studies and papers) and the use of substantial investments explain the relevant role of the EU in urban affairs. Moreover, EU environmental policy has a significant impact on land use law in European countries.

2.2. The member states: the example of Spain

2.2.1. Some data about Spain

Spain has a population of 45, 200, 737 (2007, according to official statistics) with an area of 506,030 km² and a density of 89 inhabitants/km² (according to United Nations World Populations Prospects Report 2004 revision), placing it halfway in the European ranking among the more densely populated central European countries and the less populated nations to the north (European Urban Knowledge Network).

Spain has seen rapid population growth, especially from 1960-1970 and 1970-1980, encouraged by the increase in industrialization of the metropolitan areas of large cities such as Madrid, Barcelona, Valencia, Bilbao and Saragossa. From 1960-1970 all of these urban areas had annual population growth rates of more than 3%, and in Madrid's case over 4%. 1970-1980 also saw rapid population growth but at a reduced rate, 2% (Madrid) or less. Population growth declined considerably in the decades which followed, bottoming out towards the end of 1990-2000. Since 2000 in particular continued migration has contributed to a steady increase in the natural rate of growth.

Rapid population growth from 1960 to 1980, concentrated in the metropolitan areas of large cities, produced a serious shortfall in infrastructure, housing and facilities, and a consequent deterioration in urban life quality. From the mid-1970s this combined with industrial decline in places such as Bilbao and the central area of Asturias, home to the iron and steel and shipping industry which went into crisis throughout Western Europe.

The housing development growth rate in recent years has been spectacular and remained buoyant until the crisis of 2008. But it has been coupled with sharp house price increases making it very difficult for a large percentage of the population to buy a home. A drop in average household size and a steady increase in immigration generate new housing demand.

Spain's urban population is concentrated in four major urban areas each with more than 1,000,000 inhabitants (Madrid, Barcelona, Valencia and Seville) and located, with the exception of Madrid, on the peninsula's periphery; 9 urban areas of

between 500,000 and 1,000,000 inhabitants (Bilbao, Malaga, the central area of Asturias, Saragossa, Alicante/Elche, the Bay of Cadiz, Vigo/Pontevedra, Murcia and Las Palmas in Grand Canary); 35 urban areas of between 100,000 and 500,000 people; and 30 urban areas of between 50,000 and 100,000 inhabitants. There are thus 78 urban areas throughout Spain with more than 50,000 inhabitants.

Physical characteristics, communications, the location of industrial enclaves and coastal tourist settlements all mean that the population is unevenly distributed and concentrated particularly in the peninsula's periphery and the Madrid metropolitan area, which is situated in the sparsely populated center of the country.

Apart from the Madrid metropolitan area which is witnessing high growth rates, the populations of smaller urban areas such as Malaga, Alicante/Elche and in particular Murcia and Vigo/Pontevedra are also expanding rapidly. The growth trend in the outlying regions of the peninsula (in the tourist areas along the Mediterranean coast) and the central area around Madrid thus remains constant.

Spain experienced a very slow natural growth rate from 1990 to 2000 as well as one of the world's lowest fertility rates, well below the European Union average. In 1996 Spain's average number of children per woman was 1.16 against 1.44 in the rest of the EU. The continued increase in immigration since 2000 has caused this indicator to climb, but it still remains below the European average. Population ageing raises many problems such as the provision of retirement pensions, health care and a greater demand for facilities for senior citizens.

An increase in migration produces diverse effects: on the one hand a rejuvenation of the population, more young workers in the job market and consequently more contributions to the social security system, while on the other hand it increases demand for facilities and housing and raises social integration issues.

2.2.2. The framework of Spanish land use law

In this section I will focus on the general trends, (comparing the Spanish situation with American and other European land use laws) with reference to historical and current land use law. Case law is clearly very important, but the leading role has been played until now by the legislative branch which has created the modern land use law in Spain with the introduction of several very technical Acts.

On the other hand, urban planning has a major role in this scenario. Urban planning is compulsory, both on a regional basis (decisions made by the *Comunidades Autónomas*) and, more importantly, on a local basis. Urban planning in Spain implies a range of different legal elements: several kinds of maps, some documents and the rules for dividing the land into zones. A plan must exist to regulate land use, as it is a legal requirement in all the *Comunidades Autonomas* (there are currently 17 autonomous regions in Spain) (Ponce 2004).

2.2.2.1. The historical perspective

a) Situation before 1956

Regulation of land use has existed in Spain since the times of the *Ancien Régim* (Brewer-Carías 1997). The modern context dates back to the liberal state of the 19th century, under the jurisdiction of the police (*policía*) on a local level. The regulation focused on the growth of cities (urban developments of *Ensanche*) and on problems of health and security. Public intervention was made possible by a wide range of laws, e.g. Ordinances, alignments and compulsory purchases, which were first regulated in the Compulsory Purchase Act 1836 (Bassols 1973).

Land use law developed in a more technical way in the 20th century. From the 1920's more modern legal techniques were included in legal codes, such as the Municipal Charter of 1924, which introduced "zoning". In the 1930's, the idea of Regional Planning arrived in Spain. Catalonia was a pioneer with the "zoning

distribution Plan" in 1932, but the Spanish Civil War destroyed the possibility for concrete developments.

With regard to affordable housing, further with a bill in 1878 and the creation of several research committees, the Cheap Houses Act 1911 was the first law which addressed the issue of housing for the working classes. The Act relied on private investments and established some public grants for entrepreneurs. Unfortunately, this regulation was unsuccessful, mainly due to the lack of public resources to develop its provisions, and it was amended before the beginning of the Civil War in 1936 (Ponce 2008).

After the Civil War, public efforts were addressed to rebuilding the devastated country. Thus, the *Instituto Nacional de Vivienda*, a public specialized body, was created in 1939 to achieve this goal. Some years later, in 1957, a dedicated Department, the *Ministerio de la Vivienda*, assumed responsibility for housing policy in Spain until it was merged with the Department of Public Works at the end of the 1970's. In 2004, the Ministry of Housing was reestablished to deal with the serious problem of housing affordability. At the end of 2010, after a new political restructuration, this Ministry disappeared again.

b) 1956 National Act. The importance of planning in Spain

The modern land use law was introduced in 1956, in the middle of Franco's 40 year dictatorship. The 1956 National Act came into force when Spain was a centralized, non-democratic country. But in spite of this context, scholars agree that the act was of high technical quality and the foundation of modern Spanish land use law.

The departure point of the regulation was priority of agricultural land. Subsequent construction was granted by public powers through urban planning. As a general rule, the plans regulated the right of property, without expropriation. And the plan (at least formally) awarded decision-making powers to municipalities, with an element of discretionary interpretation. However, this discretion was not always used by democratic municipalities and there were regular abuses of power in favor of supporters of the fascist mayors.

Consequently, urban planning was the central *pièce de résistance* of the whole legal system. But twenty years after the 1956 Act, just 7,5% the Spanish territory had an urban plan implemented (Fernández 2008, p. 23). So, the failure of the plan was in reality the failure of law.

On the other hand, as regards the management of development, we do not know American type exactions or impact fees or French taxes about the use of law as a way of financing the new parts of the cities. The national Act 1956 established a legal system to develop public infrastructures and public facilities, still in work, based *grosso modo* on the owner's legal duties of giving freely a fixed percentage of land to the municipality (which is effective still today in general terms, with a national legal maximum of 10% and a possible minimum variable in each *Comunidad Autónoma*), of giving freely the necessary land to streets, green areas and local public facilities and of making all the necessary works to develop the area where the plot of land is included (López-Ramón 2009, p. 118).

But in the real world this rigid system is made flexible by means of development agreements between the city councils and the developer (a source, by the way, of corruption in some cases). Development agreements between municipalities and owners or developers are regulated in land use laws. The Spanish legal system accepts them but imposing certain procedural conditions in order to promote accountability.

c) The reformation of 1975

During the sixties and part of the seventies, Spain became an industrialized country, suffering great social and economic transformations. In the urban sphere,

the important phenomenon was the migration of a large part of the population from agricultural areas to cities, with the inherent problems of adequate housing.

The growth of the cities was quite chaotic. Theoretically, the plans were in place to deal with this migration, but a large number of municipalities did not pass plans and in other cases, as I explained before, arbitrary decisions helped speculation and made it impossible to achieve orderly urban sprawl.

Due to this and other factors, it was decided to introduce a second Act in 1975, to complete the 1956 national Act and to avoid all those problems. But the general structure of the legal system was untouched. In 1976 the regulations of 1956 and 1975 were merged in an Act (the *Texto Refundido*).

d) The Constitution of 1978

The Constitution of 1978 highlighted the deep changes in Spain with the introduction of democracy and the autonomy of the regions (effectively we passed from a centralized model to an almost federal one).

Both elements had a legal impact in the field (see art. 148.1.3 of the Spanish Constitution) and on the local level (see art. 140 of the Spanish Constitution, establishing the autonomy of local government). An act in 1985 specifically mentions land use regulation among the local authorities (Act 7/1985, Foundations of Local Regime).

According to the Constitution, Spain was declared a "Social State" (see art. 1), and several social rights were introduced including a right to environment, art. 45

“1. Everyone has the right to enjoy an environment suitable for personal development, as well as the duty to preserve it.

2. The authorities shall safeguard a rational use of all natural resources with a view to protecting and improving quality of life and preserving and restoring the environment, by relying on essential public cooperation.

3. Criminal or, where applicable, administrative sanctions, as well as the obligation to make good the damage, shall be imposed, under the terms to be laid down by the law, against those who break the provisions contained in the foregoing paragraph”.

That legal system shows a high degree of complexity which has to be managed by means of different cooperative legal mechanisms (eg. sectorial conferences and public agreements, according to arts. 5 to 10 of the Common Administrative Procedure Act 1992, modified in 1999).

2.2.2.2. *The distribution of power among the public levels. Regional legislation.*

Using the Constitutional Clause (148.1.3) the seventeen *Comunidades Autónomas* (and among them Catalonia, whose capital is the city of Barcelona, with a long history, its own language and a strong identity of nation status) have enacted laws, creating their own land use and housing law.

Although central government had delegated many of its powers, it continued making laws concerning land use using several constitutional clauses (especially art.149.1.3, which allows it to enact supplementary legislation to complete the regional legal systems. According to this article, the Spanish Parliament can enact legislation establishing “basic rules and coordination of general economic planning”, which are binding for the regional and local level). Using this argument, two national acts were came into force in 1990 and 1992, creating a common legal framework in spite of increasingly decentralized government.

Meanwhile, the price of land increased dramatically, especially in major cities, and the right to shelter became a myth for a lot of people who had to leave the inner cities (in Spain the better areas, where richer people usually live) for the suburbs

(in Spain, areas with less facilities and therefore lower quality of life), in search of affordable housing.

- a) The Constitutional Court decisions of 1997 and 2001. The fragmentation of land use law and the survival of a national hard core.

The highly controversial decision of the Spanish Constitutional Court 61/1997 almost destroyed this common legal structure. It ruled that the 1990 and 1992 national Acts were partially (about 80%) unconstitutional and, consequently, void. It established that land use law was a regional business and that the national level could only exceptionally regulate this matter (e.g. basic rules about compulsory acquisition, art. 149.1.18, which are connected directly with property right).

Consequently, the national Act of 1998 tried to fill the gap and gave some general rules about classes of land and limits to local plans, as well as some rules about compulsory acquisitions. This act was modified in the current Land Use act 8/2007 with similar contents but very influenced by EU approaches, as we will see later.

2.3. The EU legal framework in disaster prevention and its impact on national legal systems.

Beyond this previous general explanation, it is now necessary to analyze the current EU legal framework in the specific field of prevention of natural and man-made disasters. In that sense, the EU has developed both *soft law* and *hard law* in this area.

- a) As regards *the soft law*, the most relevant document is a European Commission (2009b) communication on the prevention of natural and man-made disasters. In this document, the European Commission confirms the lack of a common strategic approach for disaster prevention, and develops some ideas towards its creation. Among these ideas, the European Commission emphasizes three, in particular: the development of knowledge based disaster prevention policies at all levels of government; linking the relevant actors and policies throughout the disaster management cycle; improving the effectiveness of existing policy instruments with regard to disaster prevention. The European Commission develops different measures to be implemented in the future in relation to each one of these three ideas.

In relation to the development of knowledge, the European Commission expresses its intention to develop a comprehensive inventory of existing sources of information related to disasters and to launch a stakeholder group to review the existing information in order to take the measures necessary for filling any identified knowledge gaps. On the other hand, the European Commission states its intention of spreading best practices, developing guidelines on hazard/risk mapping and encouraging research activities.

Regarding links between relevant actors and policies, the European Commission will extend an already established program of "lessons learnt" from interventions conducted within the framework of the Community Mechanism for civil protection and will also develop specific courses on prevention. Moreover, the European Commission will increase the general public's awareness in relation to disasters. And it will create a network covering the departments in charge of land planning, risk and hazard mapping, protection of the environment, and emergency preparedness and response whilst reinforcing the link between early warning systems.

In connection with improving the effectiveness of existing policy instruments, the European Commission, in close cooperation with Member States, will develop several public policies to strengthen the integration of disaster prevention in national operational programming of EU funding. Finally, the existing Community legislation will take account of disaster prevention during the planned review of a

number of items of EU legislation and the European Commission will encourage Member States to fully integrate the common European design codes for buildings and civil works into their national planning regulation in order to mitigate the impacts of earthquakes.

b) Regarding binding regulations, the EU has already developed a set of instruments to address different aspects of prevention of disaster, our main interest, and disaster preparedness, response and recovery. These legal tools are basically directives (e.g. European Parliament, European Council 2007, Council of the European Union 1996, Council of the European Union 2009) and also some regulations (e.g. Regulation 1726/2002 banning single-hull tankers from European ports and Regulation 2038/2006 on multi-annual funding for the action of the European Maritime Safety Agency in the field of response to pollution caused by ships), as we will see below when dealing with specific questions. From a legislative point of view, probably the most relevant tools are the EU Directives, which “shall be binding, as to the result to be achieved, upon each Member State to which” they are “addressed, but shall leave to the national authorities the choice of form and methods”, according to art. 288 of the Consolidated version of the Treaty on the Functioning of the European Union (TFEU).

3. Evaluation and management of risks by land use law: the specific problem of scientific uncertainty

3.1. Scientific uncertainty and precautionary principle

According to EU legislation and Member States legal frameworks (e.g. Spain), urban planning must evaluate risks to prevent natural or man-made disasters. But sometimes when identifying a phenomenon, product or process, scientific evaluation does not allow the risk to be determined with sufficient certainty. Scientific uncertainty can arise from controversy on existing data or lack of some relevant data. In these situations, EU legal framework calls for the use of the precautionary principle (art. 191 TFEU).

The Communication from the Commission on the Precautionary Principle (Brussels 02.02.2000 COM (2000) 1) (European Commission 2000), is the most relevant EU soft law document in that field. I will provide an overview of this document in the following lines (in relation to abundant European jurisprudence on that topic, see for all Esteve Pardo 2009).

According to that Communication, the precautionary principle should be considered within a structured approach to the analysis of risk which comprises three elements: risk assessment, risk management and risk communication. Decision-makers need to be aware of the degree of uncertainty attached to the results of the evaluation of available scientific information. Judging what is an “acceptable” level of risk for society is a political responsibility. In some cases, the right answer may be not to act or at least not to introduce a binding legal measure. In the case of action, a wide range of initiatives are available: from a legally binding measure to a research project or recommendation.

In order to choose among these possible actions, measures based on the precautionary principle are guided by several principles:

- a) Proportionality: action chosen must achieve the appropriate level of protection. Principle of proportionality is a key legal principle in European law (e.g. art. 296 TFEU). Judicial review based on it relays on three “filters” or steps of control:
 - i) The means adopted must be suitable for the protection: they cannot be excessive, in the sense of restricting rights unnecessarily, nor insufficient, in the sense that they do not protect the public interest. In some cases a total ban may not be a proportional response to a potential

- risk. In other cases, it may be the only effective possible answer to a potential risk.
- ii) The restriction of rights must be necessary. It means that public authorities must be satisfied with the mildest means if effective. Every excessive measure restricting freedom must be avoided and if used can be found illegal by judicial review.
 - iii) The third filter is proportionality in the strict sense. It means that benefits (of all types) associated with public intervention must be greater than inherent costs (of all types).
- b) Non-discrimination: another classic means of controlling public action in Europe (e.g. arts. 20 to 26 Charter of Fundamental Rights of the European Union). Comparable situations should not be treated differently and different situations should not be treated in the same way, unless there are objective grounds for doing so (which must be explained according to the legal duty of giving reasons). On the other hand, non-discrimination does not prohibit *positive* actions (the European term for affirmative actions or reverse discrimination) according to the circumstances.
 - c) Consistency: measures should be consistent with the measures already adopted in similar circumstances or using similar approaches.
 - d) Cost-benefit analysis: evaluation of the pros and cons cannot be reduced to an economic cost-benefit analysis. That evaluation must be wider in scope and includes non-economic considerations. But assessment should include an economic cost-benefit analysis where this is appropriate and possible.
 - e) Examination of scientific developments: measures should be maintained as long as the scientific data are inadequate, imprecise or inconclusive and as long as the risk is considered too high to be imposed on society. Measures based on a precautionary principle shall be reexamined and if necessary modified depending on the results of the scientific research and the follow up of their impact.
 - f) Burden of proof: measures based on the precautionary principle may assign responsibility for producing scientific evidence necessary for a complete risk evaluation. It is possible to ask for prior public approval of the activity and to move the burden of proof towards the private individual who should make clear that there is no unacceptable risk of causing disasters.

3.2. Evaluation

Taking into account, if necessary, the precautionary principle, EU Member States have established regulations in relation to the public duty of evaluating risks when planning land uses. In that section I will use the Spanish example.

As a general framework, art. 10 of the Spanish land use act establishes that prevention of natural risks and serious accidents is one of the binding legal principles that must guide public regulation of land in all cases.

3.2.1. Natural risks: the EU directives and their impact on a national level: the Spanish case

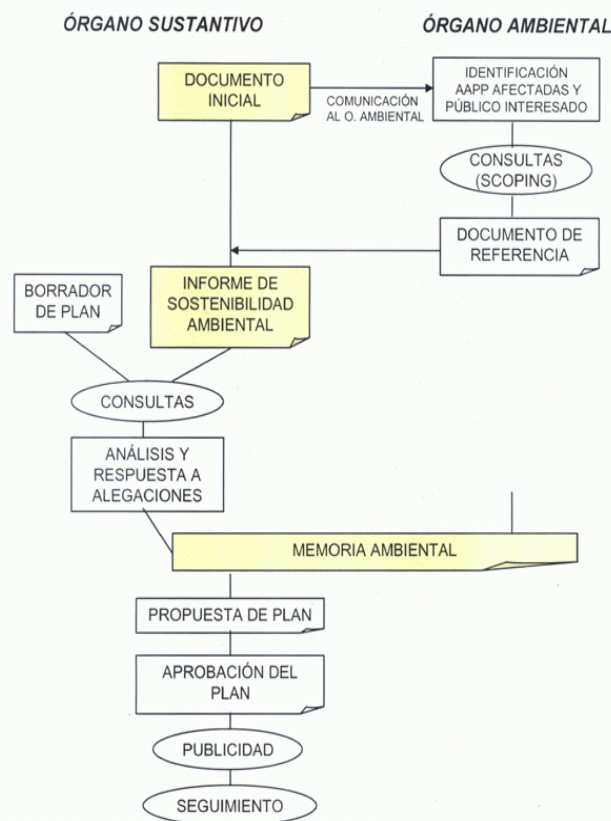
As previously explained, the EU has approved several Directives that are binding as to the result to be achieved by each Member State to which they are addressed, but they shall leave the choice of form and methods to the national authorities. This classic EU legal technique explains why Spain, like other Member States, has been obliged to implement several Directives, by passing new legislation in relation to prevention and management of disasters.

3.2.2. Natural risks: the legal requirements of evaluation by planning: the Environmental Impact Assessment and the Spanish land legislation

a) The Environmental Impact Assessment and the national Spanish land legislation

Directives on Environmental Impact Assessment are good examples of the EU influence on Member States. Among these, I want to underline the Strategic Environmental Assessment Directive (European Parliament, European Council 2011). That Directive has been implemented in Spain by means of Act 9/2006, April 28, on environmental assessment of some plans and programs. This act demands an administrative procedure for the evaluation of environmental impact caused by urban planning. In connection with that, land use act of 2007 establishes compulsory risk maps to be included in the environmental sustainability report that the developer must prepare. This report must be included in a document called Environmental Memory which explains environmental impact (art. 15).

ESQUEMA SIMPLIFICADO DEL PROCEDIMIENTO DE EVALUACIÓN AMBIENTAL ESTRATÉGICA



ÓRGANO SUSTANTIVO O PROMOTOR: Confederación Hidrográfica del Segura
 ÓRGANO AMBIENTAL: Dirección General de Calidad y Evaluación Ambiental,
 Secretaría General para la Prevención de la Contaminación y el Cambio Climático del
 Ministerio de Medio Ambiente

A simple diagram of the Strategic Environmental Assessment.

Source:

http://www.chsegura.es/export/descargas/cuenca/sequias/pes/img/ESQUEMA_TR_AMB.gif

b) Flood risks prevention and urban planning

With regard to prevention of flood risks and urban planning, the Spanish regulation *Real Decreto 903/2010*¹ implements the EU Directive 2007/60/EC (European

¹ All the Spanish legislation is freely accesible at <http://www.boe.es/legislacion/legislacion.php>

Parliament, European Council 2007) on the assessment and management of flood risks.



Cartagena (South East Spain). Town Hall square, 1919. 2 meters of water. Source: <http://www.chsegura.es/chs/informaciongeneral/elorganismo/unpocodehistoria/riadas.html>

According to this Directive, the Spanish regulation creates different tools to assess flood risks (flood hazard maps, flood risk maps and flood management maps). The regulation makes clear that urban planning is bound by all three maps ("regional and local plans when regulating land uses can not include decisions against flood management") and establishes that construction will be prohibited on lands with identified flood risks (art. 15).

3.2.3. Man-made risks: the example of the evaluation of crime and terrorism risks

The need for evaluation during the urban planning process extends to man-made risks. A good example is the compulsory evaluation of crime and terrorism risks during urban planning established by Catalan legislation and other European legislations (e.g. France). I will consider this kind of risk prevention in the last section of the study.

3.3. Management

In some cases, legislation makes the evaluation and decides how to manage the identified risks. Measures can range from establishing guidelines for future local plans to introducing legal obligations for landowners to avoid factors that can lead to a future disaster. Again, I will use a Spanish example.

3.3.1. Legal prohibitions binding land use planning

A good example of this technique is art. 12 of the Spanish Land Use Act which stipulates that urban developments are prohibited in lands with natural or technological risks. This kind of land is declared rural (*suelo rural*). Therefore there is no right to build on them and urban planning must establish that condition (and there is no due compensation for it).

3.3.2. Legal obligations binding land use planning and private owners: social function of property and prevention of disasters

a) Regional planning and local zoning

Local urban plans can be bound by guidelines which come from regional planning. Spatial planning in Spain (*ordenación del territorio*) is not in State hands, in principle. In accordance with the Spanish Constitution and the regional autonomous statutes, spatial planning is a regional power and the autonomous communities have specific acts regulating this policy. But it is true that the Spanish Constitutional Court has confirmed, in the decision 56/1986, the state's capabilities of influencing "de facto" regional planning by deciding the location of state infrastructures (e.g. the high speed train, *tren de alta velocidad*, AVE, which currently is instrumental in territorial cohesion through decisions about lines and stations all around Spain).

At the regional level, it is worth considering the Catalan example. The Catalan parliament passed an act on spatial planning in 1983 (Catalan Act 21/1983) using its jurisdiction in this field and has been developing a new generation of spatial regional plans binding local authorities in relation to land use and housing since 2004 (including plans protecting coastal lands). The last step in this recent process is the Right to Housing Act 2007, which has created the Housing Sector Plan for future approval (art. 11). This kind of regional planning can include provisions to prevent disasters. An example is the General Guidelines in Canarias. These Guidelines can establish criteria to prevent "catastrophic natural risks" which are compulsory to local urban plans (Canarias Act 19/2003).

b) Limits to the right of property and disasters

In Spain, land owners can not do whatever they want with their property. Although Spanish Constitution recognizes and protects a right to property, it must be developed in accordance with its "social function" (art. 33 Spanish Constitution). It means that legislation (and urban plans within its framework) can limit the right to property and guide it establishing positive duties. These limits are not takings and there is no compensation.

An example of this is art. 9 of the Spanish land use act which establishes that land and building owners in Spain have a duty of conservation of their properties. That legal duty includes the obligation of keeping rural land (*suelo rural*) in good condition to avoid risks of possible disasters (fires, floods...).

4. Planning and claiming damages in the case of disasters

4.1. (Lack of) Prevention: public and private liability

Possible tort actions for disasters are established in accordance with each national legal system. Clearly, for example, the American legal regime differs from the European legal regimes (Pierce 2008, pp. 167 and ff.). Private liability and public liability can have different legal regimes, according to national administrative law systems (e.g. Spain). And even with this public-private distinction in mind, national legal characteristics can be quite different (e.g. England and Spain, where, as we will see, there is an "objective" public liability, that is without the necessity of administrative fault or negligence).

In the European case, we have a plurality of legal regulations of liability, rooted in each national legal system. But there is a (narrow) EU common framework created by the Directive 2004/35/EC of the European Parliament and of the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage (European Parliament, European Council 2004). That common framework applies to private liability. Member States were obliged to implement the Directive by 30th April 2007. Spain fulfilled its legal obligation with

regard to environmental liability by means of the Act 26/2007, on 23rd October of the same year.

That Directive establishes a common European framework for environmental liability (in the case of environmental damage, as defined in art. 1) based on the "polluter pays" principle. The Directive only covers occupational activities listed in Annex III to the Directive. Annex III includes mainly agricultural or industrial activities which require a license to be undertaken. These types of activities are deemed the responsibility of the operator even if he or she is not directly at fault. Out of Annex III there are other activities that can damage species or natural habitats protected by EU legislation (according to the definition of art. 1). In this second case, the operator will be held liable if, and only if, he or she is at fault or negligent. In both cases, this Directive shall not cover environmental damage caused by "a natural phenomenon of exceptional, inevitable and irresistible character" (art. 4, paragraph 1, letter b). It does not cover damages caused by nuclear risks (art. 4, paragraph 4). The competent authority (which is designated by Member States, art. 11), will establish which operator has caused the damage, assess the significance of the damage and determine the remedial measures which should be taken. The interested party will have access to a court or other independent and impartial public body with the competence to review the public decision (art. 13).

Regarding public responsibility for a lack of proper evaluation of risks, there is no common European legal framework. Therefore, each Member State will apply its own legal regime. In the Spanish case, art. 106.2 of the Spanish Constitution and arts. 139 and ff. Act 30/1992 establishes a legal framework applicable to all public administrations in Spain in all activity sectors. According to this legal regime, a public administration will be liable if there is a real damage which citizens do not have the legal obligation of bearing, if administrative activity (or lack of administrative activity, when action was legally compulsory) is involved in the damage and if there is a relationship of causality between the public activity (or the lack of public activity) and the damage. In Spain, fault or negligence do not have to exist to recognize administrative liability. Payment is made through public budgets: as a general rule, administrative officials do not have to pay money from their pockets (the exception being when a public administration pays for damages caused by the serious negligence or fault of a public employee. In such cases, public administration must recover the sum paid from the public employee, art. 145.2 act 30/1992).

A question that can arise in case of disasters and damages is whether the public activity of prevention was adequate. In other words, should public administration be liable for damages if urban planning does not assess properly natural or man-made risks and there are damages as a consequence of a disaster?

4.2. A Spanish example about compensation claims in the case of disasters: the Biescas Campsite

This disaster in 1996 had a big impact on Spanish society. A sudden flood in the gorge of Arás (in Huesca, Northeastern Spain) destroyed the *Biescas* campsite resulting in 87 deaths. After lengthy discussions to define this disaster as an "act of God", a lawsuit was brought against the public authorities. A Spanish Court decision in 2005 faced directly the question of the possible existence of public responsibility due to a lack of proper assessment of risks when permitting the construction of the campsite in the ravine. And the outcome was positive: state and regional administration were declared guilty and compensation for damages was recognized.



Biescas tragedy

Source: <http://icogblogs.com/riesgos/category/noticias/catastrofes/page/2/>

This noteworthy judicial decision stated that public administration did not evaluate the existent “natural and man-made risks of all kinds” for people and belongings. According to the Spanish *Audiencia Nacional*, public administrations are always obliged to prevent risks even if where there is a lack of specific legal provision establishing such a duty. Due to the fact that the disaster was neither unpredictable nor unavoidable, public authorities were obliged to compensate for damages (€12 million).

This disaster triggered several measures to develop policy for the prevention of disasters, e.g. the modification of the (above-mentioned) Spanish land use act and the creation of a Parliamentary Special Commission on Prevention and Assistance in Catastrophic Situations.

5. Two examples of land use planning and prevention of disasters: location of nuclear plants and prevention of terrorism through environmental design (*CPTED strategies: Crime Prevention Through Environmental Design*)

In the last section, I will consider two relevant examples of the role of urban planning in avoiding and mitigating disasters, as the case of Fukushima in 2011 and terrorists’ attacks in several cities around the world (among them, Madrid and London, in Europe) show. I chose both examples because although they are man-made disasters, the combination of the human action with natural conditions (fires, winds...) can create the conditions for huge devastations.

5.1. Location of nuclear plants and prevention of risks through urban planning: administrative procedures and fundamental rights.

Prevention of disasters caused by nuclear energy is a main concern, as demonstrated by the tragedies of Chernobyl (1986) and Fukushima (2011).

The International Atomic Energy Agency has developed safety requirements in relation to the location of Nuclear Plants (IAEA 2010).

In the European sphere, nuclear power stations currently produce around a third of the electricity and 15% of the energy consumed in the European Union, according to European Commission information (European Commission 2012). This explains the Council Directive 2009/71/EURATOM of 25 June 2009 establishing a Community Framework for the Nuclear Safety of Nuclear Installations (of compulsory translation by member states by 22 July 2011) (Council of the European Union 2009). But this Directive says nothing about the location of nuclear plants. It

reminds us that “National responsibility of Member States for the nuclear safety of nuclear installations is the fundamental principle on which nuclear safety regulation has been developed at the international level”, and it is still true at a European level.

So, it is necessary to go to national legal systems of EU member states to know about evaluation of risks and urban planning. In the Spanish case, according to the regulation 1836/1999, before gaining a public decision for the licensing of a nuclear plant, it is necessary to get a “previous license or site license” which is a recognition by national public authorities for the possibility of locating a nuclear plant in an specific site. After getting this previous license, and only then, the previous license holder can apply to get a building permit to construct the nuclear facility.

The interested party must apply for the previous license by submitting several documents, including an evaluation of any possible risks detected. After a due administrative procedure with public consultation, the Ministry of Industry will either deliver the previous license or will refuse the application. Therefore, we are dealing with the exercise of discretionary powers.

In this context, the role and importance of due process to guarantee citizens' rights and good administration, i.e. the exercise of discretionary powers which respect the obligation of due care, is essential.

That importance of administrative procedures in protecting fundamental rights was underlined by a famous German Constitutional Court decision concerning the Mülheim-Kärlich nuclear plant (BVerfG, 20.12.1979 - 1 BvR 385/77).



Mülheim-Kärlich Nuclear Power Plant.
Source: Wikipedia.

In that decision, the German Constitutional Court emphasized the huge relevance of administrative procedures (as the moment for risk assessment). Administrative procedure is a tool to protect the right to life and physical integrity, not just a defensive tool, but an active tool to promote the respect for fundamental rights by imposing the duty of protecting and promoting them on public authorities.

5.2. Planning and prevention of terrorism risks. A Spanish example: the car bomb attack against a Guardia Civil barrack

Interest in *public policies for the prevention of delinquency and terrorism* is growing, particularly in relation to urban environmental design (Ziegler 2007).

Various European institutions are involved in efforts to prevent delinquency and improve urban living conditions. One report by the Regional Committee on “Delinquency and security in cities” (18 November 1999), points out:

“It is important to take into account, right from the outset of any major new building works or the renovation of dilapidated areas of a city, measures to prevent urban violence. This can be achieved by close collaboration between the authorities

responsible for urbanisation, building owners and the authorities responsible for the safety of the community”.

In a meeting on 15 March 2001, the Council of Justice and the Interior of the European Union gave its political approval to the conclusions of the conference of European experts, *Towards a strategy based on understanding to prevent crime* (Sundsvall, Sweden, 21-23 February 2001), who highlighted:

“CPTED or DCO [“CPTD” and “DCO” stand for *Crime Prevention Through Environmental Design* and *Designing Crime Out*] has proved to be an effective and practical strategy in the prevention of delinquency and the sense of insecurity, integrated by multidisciplinary collaboration. The best practices referred to CPTED/DCO should be gathered, evaluated and made accessible to all those concerned. This process should use a common framework and the transferable concepts, processes and principles should be identified”.

Finally in the European Union, the connection between housing policy and security and, in particular, urban design for the prevention of delinquency, has recently been discussed in the Regions Committee Report on 13 February 2007 (point 1.8) “Regional and Housing Policy”:

“The projects should fit together adequately and in the space which surrounds them. When new housing is built or renovated, the regions and the local authorities should take into consideration such issues as design, in order to discourage delinquency and create zones of quality, sustainable development and patrimony, in addition to the needs and aspirations of the local communities and the widest possible impact on cohesion”.

This European interest in the situational prevention of crime explains the development of a European standard for the prevention of delinquency by means of urban planning and architectural design (ENV 14383-2). As we know, the European standards are voluntary (complimentary not obligatory) between countries, institutions and individuals as to how a product or process should be. The key components of the European market unit, are the technical specifications approved for an organization recognized for standardization for its repeated or continuous application, which can be international (elaborated by the ISO, *International Standardization Organization*, e.g. ISO 9000), European (EN, arising from the European Committee of Normalization, e.g. EN 50130-501136 about alarm systems, EN 1522/1523 about bullet-proof doors and windows, ENV – pre-standard- 1627-1629 about anti-burglary properties of doors, windows and window bars...).

In the mid 1990s, a decision was reached to standardize procedures (as opposed to products) in order to help local and regional authorities, urban planners, architects and engineers in their efforts to reduce delinquency in collaboration with the police, security companies, insurers and residents associations.

The European Committee of Normalization set up a technical committee - 325 (tc 325) in 1996 in Denmark to work on the new standard. The project was divided into three work groups (wg 1, 2 and 3). Wg 1 is presided by France and concentrated in terms and definitions. Wg 2 is for urban planning and is presided by the Netherlands. Wg 3 is presided by the UK and is concerned with housing design, shops and offices.

Wg 2 has developed a European pre-standard (ENV) approved by the European Committee of Normalization in 2002, with provisional application for 3 years, and the possibility of becoming an EN. The ENV 14383-2 is important as it is the first effort to establish common terms and definitions regarding the situational prevention of crime. Finally, in 2006 the EN 14383-1:2006 standard was approved for terms and definitions. Moreover, during the period 2005 to 2007 two technical specifications have been approved (dwellings and offices: CEN/TS 14383-3:2005, CEN/TS 14383-4:2006) and a technical report (urban planning: CEN/TR 14383-2:2007).

Among the member states of the European Union, the United Kingdom and, to a lesser extent, France and Spain are examples of countries who have applied this idea to the concrete development of public security policy, introducing new standards and/or changes to administrative practices.

In the case of Britain, various official reports and the legal system itself have incorporated this perspective. Among these reports, *Safer Places: The Planning System and Crime Prevention* (Office of the Deputy Prime Minister 2004), highlights the fact that crime and the fear of crime can compromise social cohesion and, as a consequence, the sustainable development of communities, insisting that it is more efficient from an economic point of view to consider the variables of crime prevention at the planning stage, since it is less costly than to correct or manage badly designed urban development. In the same way, the connection between security and social cohesion is emphasized, which has been a crucial element of the British political agenda since 2001, with the creation of the *Community Cohesion Unit*, within the *Home Office*.

With regard to the legal system, the *Crime and Disorder Act* of 1998 contains the public competence for the prevention of crime and disorder (Section 17), which in the urban environment has been defined in the *Planning Policy Statement 1: Delivering Sustainable Development*, 2005.

The *Safer Places* report connects public security with urban planning and emphasizes the link between security and social cohesion, establishing the need, at the planning stage, for local authorities to take into consideration the best practices established in the official reports mentioned, which include an analysis of different experiences with regard to access and mobility in the urban space (well defined access, avoiding isolated stairways, tunnels etc., appropriate road design...), urban structure (for example, avoiding buildings which can be used for anti-social behavior), vigilance (for example, adequate nocturnal lighting and the installation of CCTV), *relevance* (referring to urban design which encourages a sense of community, with clearly defined divisions to avoid confusion between private and public spaces), physical protection of private property (a more traditional perspective which we can identify with), activity (avoiding monofunctionality and urban segregation and encouraging mixed use and different types of housing) and management and maintenance (to avoid urban environments which incite vandalism and increase the risk of crime).

These reports and legal documents also include some new practices in the area of administrative security policing, such as the creation of *Architectural Liaison Officers*, specialized officers experienced in the risks of delinquency who advise on urban planning issues, and in the development of the *Secured by Design*² initiative, supporting the principles of "designing out crime" by use of effective crime prevention and security standards for a range of applications.

In the case of France, the well known urban problems this country faces have also led to think on urbanization as a tool for the prevention of delinquency and urban violence (Bauer and Raufer 2005), with similar official reports on the subject, as in Britain (e.g. Peyrat 2002). Moreover, since 1995, the French legal system incorporates what we could define as an evaluation of the crime impact of specific developments (see art. L111-3-1 of the *Code de l'Urbanisme*, modified by Law 2007-297, 5 March 2007, relating to the prevention of delinquency).

In Spain, an addition to the Catalan regulation was introduced in 2006, specifying the content of the already mentioned Social Memory (The Social Memory is a specific element of Catalan comprehensive plans which must take into account several elements and include explanations for alternatives decided. See art. 69 Catalan Decree 305/2006, 18 July). The new regulation states that "an evaluation

² <http://www.securedbydesign.com>

of the impact of proposed urbanization" with regard to "gender, should also form part of the Social Memory, as well as social groups who need specific attention, including immigrants and senior citizens", so that "planning decisions, based on information about social realities, can contribute to the development of equal opportunities between men and women, as well as favoring other groups in need of protection". This evaluation must contain a diagnosis of the situation and an evaluation of the social and gender impact of the urbanization plan, and must justify, among other aspects, the coherence of the proposed plan with the needs of men and women and of other groups with regard to various parameters, including "security and the use of the urban fabric" (See art. 69 Catalan Decree 305/2006, 18 July).

What happens if there is a criminal attack which causes a disaster and public authorities do not have take all the possible planning measures to avoid it? A second interesting Spanish judicial decision concerning public responsibility in the prevention of disasters (for the first, see above in 4.2. the disaster of the Biescas campsite) is the Spanish Supreme Court decision of November 2, 2004. In this case, the judges considered the car bomb attack against a barrack of the Spanish security forces (specifically, the Guardia Civil). The explosion caused one death.



Images of a car bomb attack at a Guardia Civil barrack in Vic in 2001.

Source: <http://jquinyonesblog.blogspot.com.es/search?q=VIC>

The plaintiff argued that personal and material damages were caused by the lack of a proper plan to introduce security measures (a previous attack had been attempted against the same police station a year earlier). The Spanish Supreme Court refused the claim for damages, arguing that although it was possible to plan for more security measures in the urban design, the damages were caused by the terrorists and not due to a lack of public action (in the Spanish legal regime this case is called the breach of causal nexus: there can be a maladministration but the cause of damages is not this maladministration but the activity of the victim or a third party, e.g. the terrorist attack) (Tribunal Supremo de España 2004).

6. Some final conclusions

That study has adopted a legal perspective to expose the state of the art of disaster prevention in Europe, using as an example the Spanish case. Although the EU does not possess powers in the field of land, the treaties regulating its functions give it several goals to achieve (sustainable development, solidarity, fight against the exclusion, economic, territorial and social cohesion) as well as powers in the field of the environment and other public policies with territorial impact. Those goals and powers, investments of money and promotion of intellectual networking give the EU

a place in the area of disaster prevention and mitigation. EU role is developed by means of *soft law* and *hard law*.

European Commission Communication of 2009 on the prevention of natural and man-made disasters is important among the *soft law*. In relation to *hard law*, the EU has enacted several Directives and Regulations which bind member states in different degrees. On the other hand, article 191 TFEU calls for the use of the precautionary principle in case of scientific uncertainty, a principle that has been considered in the Communication from the Commission in 2000.

According to that EU framework, Member States must evaluate disaster risks when planning land uses. The paper analyzes the Spanish case as an example, studying how the Spanish legal system has implemented EU directives (environmental impact assessment, flood risk prevention) and how it manages the identified risks (using direct legal prohibitions or allowing regional planning to limit local land use planning when necessary). Moreover, the study has considered public and private liability in case of disasters. Focusing on the public responsibility for a lack of proper risk evaluation, the study underlines the lack of a common European legal framework and the need of applying each national legal regime in that area. After explaining the legal Spanish regime briefly, it has been considered if a public administration should face liability in case of damages caused by inadequate land use regulations. The case of the *Biescas* campsite has shown clearly that it is perfectly possible in Spain.

The study finishes with two examples of land use planning acting as a factor of prevention and mitigation of disasters. In both cases we are in front of possible man-made disasters. In the case of the CPTED, the study explores public responsibility for a lack of due prevention through land use planning, using a second Spanish judicial decision in that field.

Therefore, the study shows the limited but important role of the EU level; the relevant member states' responsibility in preventing and mitigating disasters and the legal mechanisms used to connect both levels (*soft law*, treaties, directives, regulations) and to ensure a proper evaluation of risks when planning the uses of land.

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