

Maset-Llaudes, Amparo; Fuertes-Eugenio, Ana M<sup>a</sup>; Pardo-Forcadell, Pilar

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## INTEGRATED URBAN REGENERATION: AN EMPIRICAL STUDY OF THE NORMATIVE FRAMEWORK IN SPANISH REGIONS

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**“INTEGRATED URBAN REGENERATION: AN EMPIRICAL STUDY OF THE  
NORMATIVE FRAMEWORK IN SPANISH REGIONS”**

***Ana M<sup>a</sup> Fuertes Eugenio***

*[afuertes@eco.uji.es](mailto:afuertes@eco.uji.es)*

*Instituto Interuniversitario de Desarrollo Local*

*Departamento de Economía*

*Universitat Jaume I*

***Amparo Maset Llaudes***

*[maset@cofin.uji.es](mailto:maset@cofin.uji.es)*

*Instituto Interuniversitario de Desarrollo Local*

*Departamento de Finanzas y Contabilidad*

*Universitat Jaume I*

***Pilar Pardo Forcadell***

*[pilarpar1@hotmail.com](mailto:pilarpar1@hotmail.com)*

*Instituto Interuniversitario de Desarrollo Local*

*Universitat Jaume I*

## ABSTRACT

The current urban planning model for Spanish cities does not meet the criteria for successful urban sustainability, in fact quite the opposite, it follows the dispersed city model introduced twenty years ago by the boom in the construction industry and improved communication infrastructures. In this context, one way for Spanish cities to move towards sustainable principles is to consider **integrated urban regeneration (IUR)** as an alternative to building new housing. To estimate the impact of IUR on the current model, it is important to know firstly, how it is provided for in Spanish legislation and applied in urban planning throughout Spain.

From the normative point of view, territorial and urban planning decisions are the exclusive competence of the self-governing regions, although the Spanish government is responsible for national land use legislation. This study analyses the applicable urban planning legislation in each region by examining the mandatory regulations (laws and development regulations) on urban and territorial planning, the protection of natural areas, natural resource management, the environment and environmental quality, environmental assessment, housing and laws that explicitly refer to sustainability in each self-governing region, using a series of indicators produced for the purpose based on the contents of the “White Paper on the Sustainability of Spanish Urban Planning”. This information provides an overview of the situation of IUR at the national level and in each self-governing region, verifying the levels of compliance to reveal the gaps in Spanish sustainability legislation. The results of this study are linked to the lines of action in the Leipzig Charter on integrated urban development policy and in particular for deprived urban areas within cities.

Key Words: Integrated Urban Regeneration, sustainable city, Indicators of sustainability.

## INTRODUCTION

The most common present-day urban system, and one that has spread remarkably in European urban development as a whole in recent years, follows the Anglo-Saxon model of the **dispersed city**. In contrast to the classic model of more compact development which has existed for many years in the Mediterranean cities of southern Europe, the dispersed city is characterized by its complex structure and its consumption of large amounts of energy and natural resources (basically land and other materials). It covers an increasingly large and diffuse area, and is both functionally separated and socially segregated. The services sector is generally decentralized and an extensive network of motorways, and a great deal of public and private transport, is necessary (Monclús, 1998). In terms of urban planning, the dispersed city can be described (Camagni, 2005) as made up of polycentric structures in which low density and individual houses are predominant in the residential areas, and in which the

decentralization of economic activity has generated a productive fabric of a markedly technological nature. Finally, the transformation of the peripheral urban structure has divided the territory according to its function, but without maintaining any defined global model.

This model of a dispersed city has established itself in Europe in recent decades, although not in a uniform way. It has spread more rapidly in the north of the continent than in the Mediterranean region. No consensus has been reached on the reasons why two different models (the Mediterranean and the Anglo-Saxon), which for a long time represented different urban structures, are now converging in the dispersed city. What is certain is that this system has become established throughout Europe, taking advantage of the boom in the building sector, and improvements in communications infrastructures (Borja & Castells, 1999). Urban planners, economists, sociologists, and studies of the subject in general agree (Rueda, 1997) that the survival of this system depends to a great extent on the supply of the resources necessary for it to function correctly, on its capacity to deal with the waste it produces, and on the control of the detrimental effects of its productive activities, in short, on its closer approximation to what is known as the **sustainable city**.

With regard to the Spanish model, the first point that needs to be made is that many of the changes that can be seen in Spanish urban areas are related to the process described above: the imposition of a city model which fails to meet the criteria of what is understood by a sustainable city. The alternative, from the economic, urban and environmental point of view, is the city that approximates closely to the multi-cultural, economically competitive and socially cohesive **compact Mediterranean city**. In other words, a city that complies as strictly as possible with the criteria for sustainability recommended by the United Nations World Commission on Environment and Development during the International Conferences it has organized since the middle of the 1980s<sup>1</sup>.

Some possible ways of reaching the objectives established during the above-mentioned summits are collected in the **Sustainable Economy Law** that was recently passed in Spain. This establishes the measures that can be applied by public bodies in order to achieve a more sustainable urban environment, and is clearly directed at **Integrated Urban Renewal (IUR)** as a possible way of counteracting the negative effects of the dispersed city model. IUR reduces land use and the threat to natural spaces, and generates employment. As

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<sup>1</sup>See ONU (1972, 1976, 1984, 1992a, 1992b).

such it is committed to an alternative way of building new housing which allows us to come closer to the model of the sustainable city.

To estimate the impact that IUR might have on the current model it is important to know, first of all, how it is provided for in Spanish legislation, and how it is applied through urban planning in our country. From the regulatory point of view, decisions relating to territorial and urban organization are the exclusive competence of the self-governing regions, although the Spanish government is responsible for national land use legislation. This article analyses the legislation that applies to the urban development of each region in the areas of urban and territorial planning, protection of natural spaces, management of natural resources, environment and environmental quality, environmental evaluation, housing, and laws that relate explicitly to sustainability. To do this it uses a set of indicators created to this end based on data contained in the “White Paper on Sustainability in Spanish Urban Planning”.

On the basis of the information provided by an overview of the situation with regard to IUR at the level of the self-governing regions and the central government, it will be possible to verify the degree of compliance and, therefore, the shortcomings of the different legislations that exist with regard to sustainability in Spain. The results obtained are linked to the lines of action that are to be followed according to the Leipzig Charter on subjects of Integrated Urban Development policy, paying particular attention to deprived areas within the overall context of the city.

## **I. URBAN SUSTAINABILITY**

The demographic explosion of the 20<sup>th</sup> century has been accompanied by a growing process of urbanisation (Carlino, 2005; Duranton & Puga, 2003). More than half the world’s population lives in cities and concentrates its activities, both of production and consumption, in these areas. This phenomenon has given rise to an increase in the environmental impact of cities, which are currently responsible for more than 40% of the total consumption of energy, and 30% of the total emissions of CO<sub>2</sub> (Capello & Camagni, 2000). At the same time, the environmental management of the urban nuclei becomes more difficult as their size increases and problems occur in guaranteeing the quality of essential services such as the supply of drinking water, the treatment of wastewater, the management of solid urban waste, the control of traffic and of noise and atmospheric pollution. In addition, the excessive concentration of the population can also lead to problems of security and social exclusion (OECD, 2006).

Furthermore, cities are not self-sufficient from an environmental point of view in that they are capable neither of producing all the resources they consume, nor of absorbing all the waste they generate (rubbish, wastewater, emissions of pollutant gases, etc.)<sup>2</sup>. In short, they represent a carbon footprint on a huge scale, and one which affects the global ecosystem. It is for this reason that various international institutions consider that cities play a fundamental role in providing models of sustainable development, given that they are principally responsible when it comes to solving the problems they cause<sup>3</sup>.

The idea of the sustainable city is based on three main concepts: a healthy economy, the quality of the environment, and social cohesion. The management of the cities of the 21<sup>st</sup> century and their urban planning therefore requires consideration of these three facets which include the regeneration of public space in all its aspects, not only for reasons of ecological, but also of social and economic, sustainability. The planning of a sustainable city requires the study and understanding of all the relations that are established between the population, services, transport and sources of energy, as well as its overall impact on both the immediate surroundings and on the wider geographical sphere (Fujita, 1989). The ecological, social and economic solutions interact to create cities that are healthier, livelier, and more open.

In this context, Spanish urban planning is problematic as far as sustainability is concerned, from the point of view of both the direct and indirect impact that planning decisions can have. The integration of sustainability is a necessary evolution of the work of planning and integration the basis of which is the conviction, both theoretical and practical, of the importance and responsibility of the urban system with regard to the consumption not only of natural resources, but of all resources (Rueda, 1999).

The new paradigm of sustainability is making its presence felt in all aspects of planning and management of the social and economic systems to such an extent that the only possible response is to try to accept the concept of a “limit” in every facet of human activity.

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<sup>2</sup> See Fernández Güell (2006).

<sup>3</sup>Sustainable development is the simultaneous combinations of three aspects: an economic growth that favours social progress and respects the environment; a social policy that stimulates the economy; and an environmental policy that is both effective and economical. The Rio Declaration (1992) on the environment and development sets out the guidelines that human activity should follow in order to achieve sustainable development. The aim of the United Nations Summit in Rio de Janeiro (Brazil) was that governments commit themselves to reaching a viable and fair balance between the environment and development, and also to a sustainable future for the Earth and the living creatures that inhabit it. To this end the Agenda 21 was drawn up (Del Riego, 2004), a programme of action that is divided into four sections: Social and Economic aspects; Conservation and management of the resources for development; Strengthening the role of the main groups involved; and Methods of execution. See “Biblioteca Ciudades para un futuro más sostenible” <http://habitat.aq.upm.es>

One of the areas in which such a response is most urgent is that of urban planning, both because of the high levels of consumption that it implies, and because of recent trends in the consumption of these resources. Thus, urban planning as a technique responsible for the configuration of the physical model of organization of cities and towns (Ascher, 2004) should be used as an essential tool for sustainability. It should be present in areas of integrated urban planning such as the need for new housing, the creation of proximity, the types of buildings constructed, the rationalization of general building and urban planning systems, urban habitability and quality, etc.

## **II. INTEGRATED URBAN REGENERATION (IUR)**

### **II.1. Definition and Objectives**

Up to some years ago, urban planning policy considered “rehabilitation” as one of a number of ways of acting on a particular urban space. However, professionals involved in urban planning have now accepted that simply rehabilitating a building is not enough to generate an area. Any intervention in a given environment should take into account an integral plan by setting environmental, social and economic objectives that are directly linked to the concept of sustainability (De Luxán, 2008). IUR, therefore, implies a group of actions that mean protection, conservation, restoration, and improvement of the urban fabric. These go beyond purely material or physical perspectives by incorporating a social and economic dimension to the rehabilitation of areas in decline. In other words, IUR is a policy and a practice of planning and intervention in the territory (not only in the city) which considers the main problems of contemporary society.

From this perspective, cities are planned as spaces which represent national models of development. Urban planning is carried out according to criteria of economic and environmental sustainability, and also of social cohesion. Clear examples of this trend are the cities of Copenhagen and Amberg; the French programme of regeneration of the deprived areas of cities; or, in Spain, the city of Vitoria. This practice means that the success achieved by certain cities in implementing IUR extends to a country as a whole. It would be impossible to understand the case of Finland without first considering the major regeneration that was carried out in the town of Espoo, and the city of Helsinki. In a similar way, the recent development of Ireland would make no sense without looking primarily at Limerick and Dublin.

*“Urban regeneration is a comprehensive and integrated vision and action which leads to the resolution of urban problems and which seeks to bring about a lasting improvement in the economic, physical, social and environmental condition of an area that has been subject to chance”*

*(Roberts and Sykes, 2000:17)*

Thus, the objective of urban regeneration is to generate a lasting improvement in the economic, physical, social and environmental conditions of an area (Vranken, 2010). In other words, it is a transformation, both physical and psychological, with social and economic implications, achieved through intervention in the areas that present symptoms of social deterioration and physical obsolescence. Urban regeneration (Schall, 1976) should allow the aspirations of the inhabitants of an area to increase. It should improve the economic activities of the regenerated area, and achieve a balanced environment in which they are developed. This, in turn, should guarantee successful projects with a high degree of sustainability.

The outstanding factors of the success of IUR are: Coordination of responsibility between the three levels of government, Capacity for transverse local management in order to coordinate the regeneration projects, Involvement of the resident population, Availability of financial resources, Integration of different sectors or areas of public action, Adequate planning in terms of finish dates and deadlines, Maintenance of a variety of housing types, Importance of urban design and involvement of the private sector.

IUR, therefore, is considered as an instrument that assumes particular functions with the aim of dealing with specific problems in two ways. On the one hand, as a tool for carrying out particular actions in response to particular problems in a given sector and, on the other, as a plan that develops for certain areas the programmes which are conceived for the city as a whole.

## **II.2. The Leipzig Charter**

The Leipzig Charter is a document that was written and signed in 2007 by the ministers responsible for the urban development of the majority of the European Union's member states. Basically, the document brings together a set of common principles and strategies for an urban development policy that all European cities, regardless of their size, should put into practice and which is supported by studies and reports carried out by the



German minister for urban planning policy<sup>4</sup>. The job of the ministers who signed the Leipzig Charter will be to integrate these principles and strategies in the national, regional, and local policies of their respective countries, to make use of the tools of integrated urban development, and to put into practice a balanced territorial organization. In short, *the objective of this Charter is that, through the principles and strategies that are to be implemented in the cities, a sustainable development will be achieved which is understood in terms of economic prosperity, social harmony, and environmental health*. These three dimensions of sustainable development are considered to be of equal condition and importance, and make way for aspects relating to culture and health.

The basic aim of this document is to promote the integration of urban development, bearing in mind aspects connected not only to architecture and urban planning, but also to governance. The Charter is structured around two recommendations: a) Make more use of the focuses related to the policy of IUR and b) Pay particular attention to the more deprived areas within the overall context of the city.

***a) Make more use of the focuses related to the policy of IUR***

This integrated policy implies the participation of organisations that are separate from the government administration, thereby allowing for participation by the city's inhabitants, and a coordination of public and private investment. Such action is aimed at establishing connections between cities and rural areas, and between cities themselves (regardless of their size). In other words, policies of urban development can not be considered in isolation, i.e. for one city alone, but must establish connecting networks in the interests of territorial cohesion.

***b) Pay particular attention to the more deprived areas within the overall context of the city***

At times, cities face serious problems of unemployment and social exclusion. The solution to these problems requires the establishment of a policy of social integration that will help to reduce inequalities and prevent marginalization and social exclusion. A well-thought out social housing policy can help enormously to achieve this aim, and also acts as an effective preventative measure. It is much more difficult and costly to rehabilitate an area in decline

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<sup>4</sup>The reports are the following: "Report on integrated urban development as a requisite for successfully achieving urban sustainability"; "Strategies for improving the physical environment in deprived urban areas"; "Strengthening of the local economy and local labor market policies in deprived urban areas"; "Pro-active education and educational policies in deprived urban areas"; and "Sustainable urban transport in deprived urban areas".

than to plan urban regulations in such a way as to avoid the appearance of marginal areas populated by groups at risk of social exclusion.

It is necessary to increase the amount of building in deprived areas, taking into account design, physical conditions, and energy efficiency. This investment should take place within the framework of a long-term development strategy which includes both public and private investment. As a rule, deprived areas suffer from insufficient transport systems and greater environmental problems. These areas need to be integrated within the city. The priorities, therefore, are the planning of efficient and affordable public transport systems, and effective traffic control aimed at reducing negative environmental impacts.

The Charter highlights that in order to put all these and strategies into practice cities need a margin of action and a solid financial base which will generate stability in the long term. It is therefore important that member states of the European Union have the opportunity of using the European structural funds for integrated urban development programmes. The EU's new JESSICA and JEREMIE initiatives, which support the setting up of funds for urban development and small businesses respectively, offer opportunities for improving the traditional sources of finance. At the national level, government departments need to be conscious of the importance of cities, and of the impact that their policies can have on them. Consequently, all the bodies involved in questions relating to cities must agree on a series of principles, rather than entering into conflict.

### **II.3. Integrated Urban Regeneration (IUR) in Spain**

Having got beyond the idea of rehabilitation<sup>5</sup> as an activity centred on the restoration of old city centres for their heritage value, Spain now understands IUR as a shared and coordinated consideration of environmental rehabilitation, urban renewal and regeneration, and an improvement in the economic and social conditions of a city's inhabitants. There is no specific official definition of IUR in Spain which would relate it to the integrated focus in a way similar to that of the Leipzig Charter. However, the practice is controlled by a regulation that incorporates an integrated focus in a manner that is not legally binding. To a limited extent, the integrated focus is a requirement, but in relation to certain public funds rather than to any specific programmes or cases.

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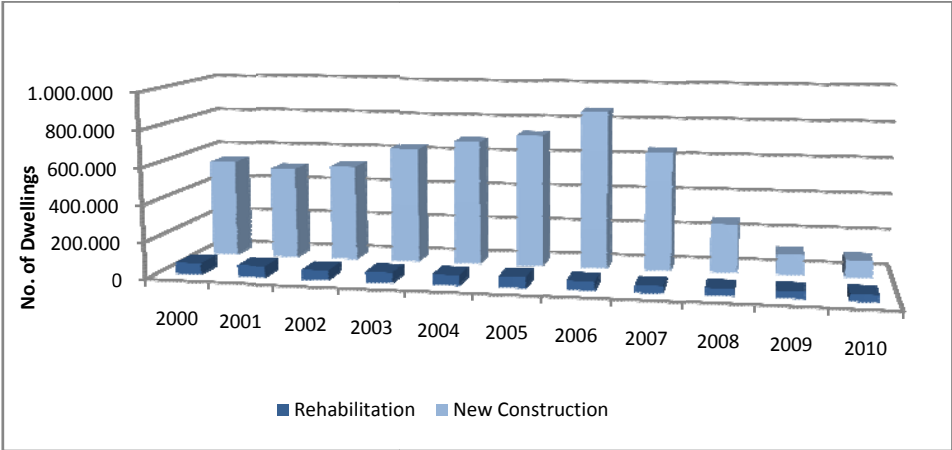
<sup>5</sup>Today we continue to use the term to refer to a number of activities, from normal repairs and maintenance to demolition and replacement, including the partial rehabilitation of interiors or of a whole building.

Thus, an integrated urban regeneration project is a set of joint and coordinated interactions by organizations from various sectors, and from one or more of the government administrations, in areas or zones of the urban fabric. It combines the rehabilitation of buildings, the possible renewal (demolition and construction of new buildings) and intervention in public space or its infrastructure with other interactions of a social, economic and/or environmental nature for its transformation and enhancement, economic revitalization, and to improve the quality of life of its inhabitants<sup>6</sup>.

IUR in Spain is considered as aimed at achieving the following, specific objectives:

1. To reduce land use and to recycle land that has already been utilized
2. To limit urban expansion and to promote density by facilitating a reduction in the need for transport
3. To optimize existing infrastructures, services, facilities and social networks, instead of reproducing them “from scratch” in the new developments
4. To reduce energy consumption, both by improving the energy efficiency of rehabilitated buildings and by reducing the need for transport
5. To promote the use of alternative and renewable energies (solar panels, etc.) and to reuse and recycle the waste produced
6. To reduce the consumption of new materials
7. To encourage recycling and the use of more ecological and healthier materials

**Figure II.1. Building licences in Spain (2000-2009)  
Proposals according to the type of construction**



Source: The authors, on the basis of data from the Spanish Ministry of Public Works

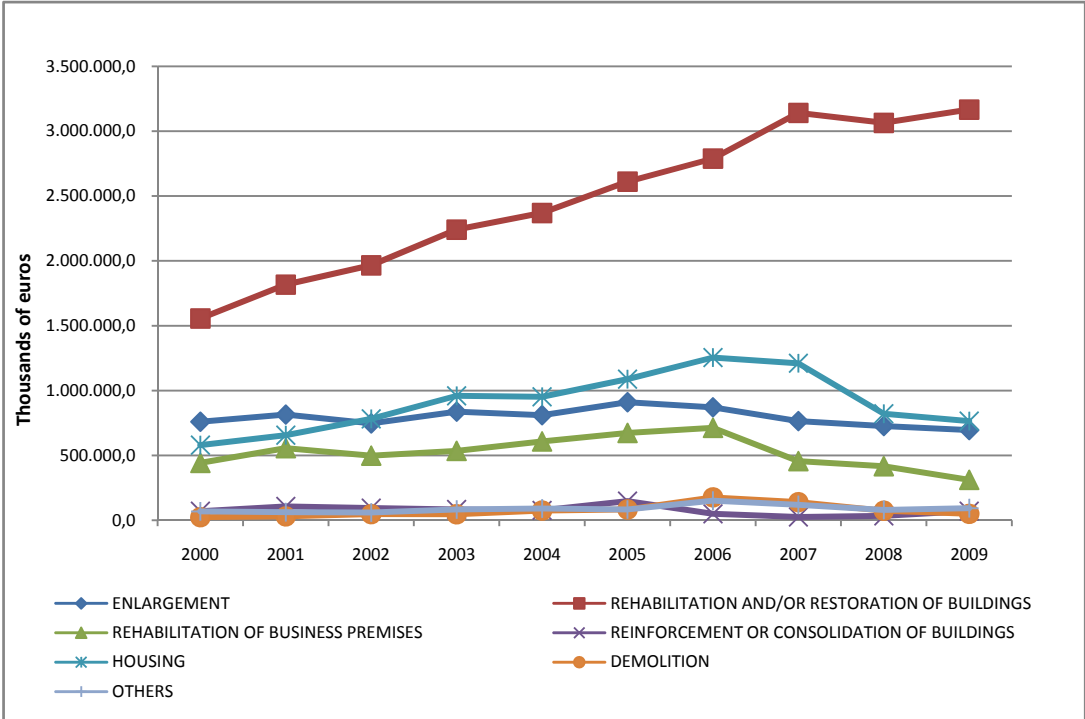
As mentioned in the introduction to this article, the Spanish urban model of recent decades has been characterized by an excess of construction and by maintenance of the

<sup>6</sup>See Ministerio de Vivienda (2008).

characteristic elements of the dispersed city, i.e. the fragmentation and functional segregation of activities, social segregation, negative environmental effects, etc. Figure II.1. shows the evolution according to the type of construction (rehabilitation, new building) of the building licences granted in Spain since 2002. We can see disproportionate difference between the two types of licence up to 2007, the time of the downturn in the building industry.

Figure II.2. allows us to analyse the evolution of the components included in the concept of “Rehabilitation” for the same period. Although what is understood by IUR is not exactly stated, we can appreciate the important change that is occurring in this sector.

**Figure II.2. Evolution of rehabilitation components in Spain (2000-2009)**



Source: The authors, on the basis of data from the Spanish Ministry of Public Works

In spite of the above data, the urban regeneration that has been carried out in Spain can be considered as reasonably successful in certain areas, such as the rehabilitation of cities in the 1980s through the general plans and self-management by the residents; the coordination between the three levels of the public administration; and the advances in the introduction of the integrated focus of IUR in various self-governing regions.

The urban regeneration operations have been divided into two categories:

- First, those which affect central areas such as old city centres, or neighbourhoods in traditional cities that are, to a greater or lesser extent, in decline. Included among these results are processes of gentrification (replacement of the original population), or the installation of new centres of activity and functional specialization (replacement or expulsion of the traditional or everyday activities).
- Second, those which coordinate various programmes and policies for social and housing improvements in what are called vulnerable or deprived areas.

The operations included in the first group are, as a general rule, associated with the development of new economic activities, or with substantial changes in the social content of the area affected. Property development plays a determining role. Such operations result in the transfer of greater or lesser amounts of public resources to private hands (Galster et al, 2011). They are carried out by means of evictions, increases in property values and, more or less intense, more or less protracted processes of exclusion of lower-income groups and less competitive (though not for that reason less necessary) activities.

The second group can be considered as processes of normalization, given that their main objective is to mitigate social conflict and reduce the distances that separate living conditions in the more deprived areas from areas that are more privileged, above all in terms of housing, public spaces, education and transport. They are often related to processes of integration of immigrant populations. These operations (which are of little interest to property developers) are usually the responsibility of the public sector, although the users themselves can sometimes be involved. In contrast to what happens in the first group of operations, here the original demographic and social content is usually maintained. This contributes to the stability, and therefore the consolidation, of the previously stratified social space (Vinuesa & Vidal, 1991).

The causes that have given rise to the application of IUR in Spain are related to aspects of mobility, climate change, and construction.

- In terms of mobility: the growth in the need for energy, the increase in pollutant emissions and waste as a consequence of the increased number of journeys made, the growing occupation of public space by private transport, the increase in traffic congestion, etc.

- A further cause is global warming, which has manifested itself in an increased frequency of extreme weather conditions (floods, droughts, torrential rain, etc.), water shortages, transmission of disease, etc.
- Finally, bearing in mind the construction aspect, mention must be made of the problems arising from the consumption of resources (especially land, but also of water, energy, materials, etc.), and those arising from the environmental burden that buildings generate over the course of their lifetime (CO<sub>2</sub> emissions, waste, etc.). The dynamic of the continual redefinition of needs, which is characteristic of our economic system, has also consolidated itself in the construction sector. This generates the continual appearance of new demands and the use of more and more resources in order to satisfy them.

All these elements, together with the current downturn in the building industry and the failure of the expansive urban model, mean that IUR is beginning to be seen as a future strategy. Within this analysis, it is very important to know which administrative mechanisms have been established for coordination between sectorial programmes or plans which allow, the establishment of, on the one hand, a model at the local level in which to integrate sectorial action (arising to a greater or lesser extent from regional or government policies), and on the other, of a certain degree of coordination at State level of the sectorial action that converges in the IUR programmes<sup>7</sup>.

Given the objectives of urban regeneration, and following the recommendations of the Leipzig Charter that are consistent with integrated urban development as a way of achieving the sustainability of cities, the next section of this article will analyse the normative framework of Spanish urban planning in an attempt to find out which measures are applied by the self-governing regions to make our habitat more sustainable.

### **III. EVOLUTION OF THE NORMATIVE FRAMEWORK OF URBAN PLANNING IN SPAIN**

An activity of such inter-disciplinary nature as urban planning is influenced by a large number of sectorial regulations governing the different policies and activities that affect the territory. Such regulations condition, to a significant degree, the content of urban

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<sup>7</sup>See Ministerio de Fomento (1999).

organization. As a result, the regulations that directly or indirectly influence urban planning in Spain are considerable in number and diversity in each self-governing region. To these must be added the State legislation relating to land use. At State level, the regulations arrange the different laws and recommendations into seven thematic groups, which correspond to a number of other areas in which urban planning has to be developed, the basic aim being urban sustainability.

Although the Spanish Constitution makes matters of territorial and urban organization the exclusive competence of the self-governing regions, the State is not excluded from the objective of overall sustainability, i.e. those aspects that go beyond the local and regional spheres and which affect the management of land use, the economy, the protection of the environment, and social cohesion. Nevertheless, given that the legislative competences are separated into areas, and that “urban planning matters, organization of territory and housing” have been transferred exclusively to the self-governing regions, in reality there are at present seventeen different sustainability situations in Spain.

### **III.1. Indicators of sustainability in Spanish self-governing regions<sup>8</sup>**

The conditions necessary for the development of a new kind of city, one that is more sustainable, better planned and more integrated, depend upon the public authorities’ response to the needs of the inhabitants through the establishment of a series of laws that redirect the urban planning process from a more rational and sustainable perspective. In Spain, the Minister for Housing published the “White Paper on Sustainability in Urban Planning in Spain”. This aims to give continuity to the impulse for a more sustainable territorial and urban development by offering itself as a tool for management. The document makes clear the links that should be maintained between urban planning and the principle of sustainability. Urban planning, the origin of the growth and organization of our cities, must allow us to create urban environments that respect their natural surroundings. It should create models of growth that aim for excellence in the reduction in the consumption of energy, and cities that provide social cohesion, innovation and an improvement in the quality of life.

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<sup>8</sup>Other indicators of sustainability, for example, in Castro (2000), Luque & Leiva (2003), Muñíz & Cervantes (2004), OSE (2008), and web page of Gabinete de Estudios y Estadísticas del País Vasco: “Un sistema de indicadores urbanos”. [www.vitoria-gasteiz.org/we001/was/we001Action.do](http://www.vitoria-gasteiz.org/we001/was/we001Action.do)

In order to analyse sustainable urban planning in Spanish cities and self-governing regions, the “White Paper on Sustainability in Urban Planning in Spain” highlights seven areas of influence:

1. The surroundings of the city
2. The urban sphere
3. Transport
4. Resources
5. Waste
6. Social Cohesion
7. Governance or governability

These seven sections can be evaluated by indicators adapted to the particular case of each region. Each one contains a total of 19 indicators of sustainability (different for each area), and 93 variables, distributed among the seven areas of influence considered. This study analyses the legislation applicable to urban planning which, given that the competences relating to territorial and urban organization are ceded to the self-governing regions, differs in each region.

Taking as a basis the study of these binding laws and regulations, we have proceeded to evaluate the normative framework, analysing each indicator of sustainability. Each indicator has been given a mark of between one and five, according to the established criteria<sup>9</sup>. Table 1 shows the valuation calculated with respect to the level of performance of the Spanish self-governing regions in the seven areas of influence. The values in bold are outstanding for the low levels of regulation they represent. In contrast, the values in italics are the highest in the table and indicate a high degree of approved legislation in this area. The shaded boxes show the criteria for action that is least regulated in each self-governing region.

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<sup>9</sup>If the indicator appears in more than 7 articles of different legislations, it is given a mark of 5. If the indicator appears in between 4 and 7 articles of different regulations, or in more than 7 in a single regulation, it is given a mark of 4. If the indicator appears in less than 3 articles in different regulations, or in up to 7 in a single regulation, it is given a mark of 3. If the indicator appears in only 1 article, it is given a mark of 2, and if the indicator appears as a possible interpretation, it is given a mark of 1.



*Table 1. Indicators of sustainability by self-governing region*

	Criteria of action in the surroundings of the city	Criteria of action in the urban sphere	Criteria of action relating to transport	Criteria of action relating to resources	Criteria of action relating to waste	Criteria of action relating to cohesion	Criteria of action relating to governance
Andalusia	66.7	25.3	6.9	17.1	43.0	23.3	44.0
Aragon	50.0	22.0	9.0	10.4	17.3	31.7	30.2
Asturias	70.0	25.3	13.2	15.9	12.0	21.7	46.0
Balearic Islands	90.0	21.7	7.2	19.2	25.7	25.0	51.3
Valencian Community	63.3	45.5	20.5	33.7	23.7	23.4	34.4
Canary Islands	90.0	32.2	21.9	24.5	62.0	61.7	55.9
Cantabria	56.7	37.7	14.4	13.4	41.0	13.4	34.5
Castile-León	90.0	29.8	6.8	21.0	45.3	45.0	44.1
Catalonia	86.6	38.5	18.6	14.5	11.0	41.7	40.8
Castile and La Mancha	80.0	36.2	11.0	22.5	43.3	28.4	37.0
Extremadura	60.0	31.5	2.7	11.5	13.3	28.3	35.4
Galicia	83.3	35.5	0.0	26.1	48.0	31.7	42.1
Rioja	63.3	20.7	0.0	20.8	19.0	16.7	37.1
Madrid	73.3	21.7	8.7	10.4	22.3	20.0	40.9
Murcia	50.0	15.8	1.1	2.7	26.3	6.7	37.5
Navarra	66.7	15.3	4.9	2.5	6.0	20.0	23.8
Basque Country	83.3	30.7	8.3	23.5	56.7	35.0	62.4
<b>AVERAGE</b>	<b>72.0</b>	<b>28.5</b>	<b>9.1</b>	<b>17.0</b>	<b>30.4</b>	<b>27.8</b>	<b>41.0</b>

Source: The authors, on the basis of data from the *White Paper on Sustainability in Spanish Urban Planning*.

An analysis of the Spanish regulations relating to the Indicators of Sustainability will give us an idea of the degree of concern generated by the different criteria.

### III.1.1. Criteria of action relating to the surroundings of the city<sup>10</sup>

Regulations of the self-governing regions show that this area is extensively regulated in the Balearic Islands, the Canary Islands, Castile-León, Catalonia, Galicia and the Basque Country. It should be pointed out that the regions with the lowest marks have no regulation

<sup>10</sup>This area of influence integrates the following variables: “preserve the existing ecosystems (natural and artificial)”, “respect for, and integration in, the territory”, “connect the different protected areas”, “respect the landscape”, “conserve land (reduce consumption and maintain its productivity)” and “favour local produce”.

with regard to “favouring local produce”, “conservation of land” and “respect for, and integration in, the territory”. In contrast, the regions with the highest marks only show a deficiency in regulation regarding “connections between the different protected areas” (which refers to links between protected areas such as the routes used for livestock, etc.). It can also be seen that the 17 regions are quite similar way in that they all have a large number of regulations for the two variables referring to “preservation of the existing ecosystems” and “respect for the existing landscape”, and a dearth for those that refer to “connection of the different protected areas”. In concrete terms, “preservation of the existing ecosystems” has the highest marks in all the self-governing regions, and includes the preservation of the habitats of natural species, ecological values and biodiversity. As far as landscape is concerned, the behaviour is homogeneous in all the self-governing regions. The recent “European Landscape Agreement” which is awaiting ratification by Spain, will have to draw up under each self-governing region.

### **III.1.2. Criteria of action within the city sphere**

#### *1. Define a more sustainable urban structure and model*

This indicator is extensively regulated by Aragon, Extremadura, Navarra and the Valencian Community. The variable “make the uses of land complex” receives hardly any attention from the self-governing regions, apart from Castile-León. Outstanding among all the regulations analysed is a law passed by Castile and La Mancha (Decree-law 1/2004), which defines what is meant by “complex”, and establishes this practice as a criteria to which all public sector activity relating to territorial organization, use and utilization must respond. With regard to “promote urban compactness” (density, constructability, etc.), although this does not appear in the regulations of Andalusia, Castile and La Mancha, Galicia, Madrid, and Murcia, the remaining self-governing regions make explicit reference to it. Finally, with regard to “promote polycentricism”, by which is understood the principle of organizing a region around various political, social and financial centres, this is barely practised in any self-governing region. Nevertheless, law 19/2003 of the Canary Islands, which lists directives for general organization and tourism, includes it in articles 48, 53 and 55.

#### *2. Promote a more sustainable use of existing buildings*

Of the six variables integrated in the indicator, the most regulated is that of “promote rehabilitation”, which is extensively referred to in the legislation of all the self-governing regions except the Basque Country. The remaining, largely unregulated variables, are

completely lacking in many legislations. This is the case with Cantabria, which only legislates on rehabilitation, or with the Balearic Islands, Castile and La Mancha, Extremadura, Murcia, Navarra, Rioja, and the Valencian Community. All of these regulate rehabilitation, but make no provision for the rest of the variables. Only the legislation of the Canary Islands and Galicia come slightly above the average. The rest of the regional legislations are below average. Two laws are worthy of particular mention: the Canary Islands' L19/2003, which regulates all the variables except that of "promote a sustainable use of existing buildings", and Galicia's, L18/2008, which also regulates all the variables except the last two, "promote a diversity of types of residence" and "make the use of buildings complex".

### *3. Promote diversity, quality, and versatility of public space in the city*

The results of the analysis of this indicator are very low, and homogeneous for all the self-governing regions. Of the six variables, the most regulated is that which corresponds to "eliminate architectural barriers", while "reduce the typologies that favour the privatization of public space" does not form part of any State or regional legislation. With respect to variables such as "incorporate multi-purpose street furniture" or "design multi-functional and legible spaces", the former is only mentioned in one article in Castile and La Mancha, and the latter in only one article in two regions, the Community Valencia and the Basque Country.

### *4. Favour access to nature (green spaces)*

Regulation of this indicator is, in general, scarce. The Canary Islands has the highest mark. The variables "favour access to nature" and "define a minimum surface area of green space" are contemplated in practically all the regions, above all in the two Castiles and Extremadura. It is surprising that this is not regulated in regions such as Galicia, Navarra, the Basque Country, and Aragon, given that much of their territory is made up of inland tourist areas "Introduce green networks at neighbourhood and city scale" is State legislation.

### *5. Improve accessibility to facilities*

By applying this indicator we can also see that there are two differentiated groups. On the one hand the regions with extensive regulation (the two Castiles, Galicia, the Canary Islands), on the other, one in which regulation is scarce (Murcia, Navarra, and Extremadura). Of the three integrated variables, the weakest in terms of legislation in all regions is "promote proximity to facilities and funding". At an intermediate level we find "improve accessibility to facilities", which is not homogeneous. While some regions regulate it extensively (Andalusia, the Canary Islands, Galicia, the Basque Country, and the two Castiles), others pay it no attention at all

(Aragon, Asturias, Extremadura, Murcia and Navarra). The variable that appears in all the legislations is “define an adequate offer of public facilities and services”.

### **III.1.3. Criteria of action relating to transport**

#### *1. Reduce distances*

In general, there is very little regulation of this indicator<sup>11</sup> in any self-governing region. From the valuation that was carried out, we can see that the region with the highest mark is the Canary Islands, followed by Aragon. Remarkable in a negative way is the fact that no article regulates this indicator in Asturias, Cantabria, Castile and La Mancha, Catalonia, Galicia, Murcia, Rioja, the Valencian Community, and the Basque Country. The only region which is constant in its provision for all the variables is the Canary Islands, with a law that includes each one (L9/2003), and through which the Directives for the General Organization of Tourism in the Canary Islands were passed. The following phrases from Articles 48, 101, 103 and 105 of this law are relevant here: “incorporating criteria of proximity and reducing the need for mobility”, “development of compact nuclei of population”, favouring a reduction in the demand for urban mobility. Also mentioned is the establishment of means of public transport which connect home and workplace.

#### *2. Promote non-motorized means of transport*

The variables that make up this indicator<sup>12</sup> receive little attention from any of the regions. There are some in which they do not even appear, and in which no article provides for this indicator (Andalusia, Balears, Aragon, Extremadura, and Galicia). The Canary Islands and the Valencian Community are the leaders in this field. Valencian legislation extensively regulates the provision of parking for bicycles, and also the promotion of non-motorized means of transport. The variable that is most regulated by all legislation is “Promote non-motorized means of transport” (of the 6 variables integrated in the indicator, this is the only one provided for by more than three self-governing regions). In its Urban Planning Regulations (RD 2159/1978), the State Legislation stipulates that the network of pedestrian routes established in the partial plans must be of sufficient nature and extent to guarantee non-motorized communication within the planned perimeter, and, where possible, with the

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<sup>11</sup>This indicator is made up of the following variables: “reduce distances”, “connect home and workplace”, “establish logistic platforms of distribution in every neighbourhood”, “reserve space for the marketing of local products” and “reduce the infrastructures necessary for the city to function”.

<sup>12</sup>This indicator includes variables such as “integrate pedestrian and cycle networks with green areas”, “increase the amount of space for pedestrians”, “create neighbourhood pedestrian and cycle networks”, and “integrate the bicycle into public transport”.

adjacent areas. In particular, access to community areas should be facilitated. The Valencian Community regulates this in L4/2004, which devotes an entire article to urban mobility and public transport, establishing among other things, pedestrian routes separate from road traffic (in order to facilitate inter-urban connection), and the promotion of public transport. Castile-León regulates this variable in a more general way in two different laws (L5/1999 and Urban Planning Regulations). With regard to “integrate the bicycle into public transport”, Asturias and Navarra are the regions which list criteria of organization for the inclusion of bus and cycle lanes.

### *3. Reduce motorized private traffic, promoting public transport*

Applying the valuation system studied, the self-governing regions in the lead with regard to legislation of the variables that are integrated in this indicator<sup>13</sup> are the Canary Islands, Catalonia, Castile-León, the Valencian Community, Asturias, and Cantabria. At the opposite end of the scale, with no legislation, are Extremadura, Galicia, Murcia, Navarra, Rioja, and Aragon. The variable “reduce the speed of motorized private traffic” only appears in one article, in Madrid. The three variables corresponding to “reduce the surface area destined to private vehicles”, “restrict the use of vehicles”, and “limit the number of parking spaces for vehicles” are only regulated in two regions, the Canary Islands and Cantabria. The variable that is most extensively provided for is “reduce motorized traffic by promoting public transport” which is regulated in almost all regions.

## **III.1.4. Criteria of action relating to resources**

### *1. Optimize and reduce the consumption of energy*

On applying the evaluation system of our study to the variables of the indicator<sup>14</sup>, the regions with the best results are: the Canary Islands, Galicia, Castile-León, Andalusia, Catalonia and Rioja. The only region that does not regulate this indicator is Navarra. Murcia and Aragon do, but to a very limited extent. The region in which it is most regulated is the Canary Islands, which provides for all the variables of the indicator. The variable “design urban

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<sup>13</sup>It is made up of the following variables: “reduce the amount of motorized private transport”, “promote public transport”, “establish an adequate offer of public transport on an urban scale”, “construct integrated public transport networks (inter-modal stations)”, “reduce the speed of motorized private transport”, “reduce the surface area dedicated to private vehicles”, “restrict the use of private vehicles”, and “limit the number of parking spaces for private vehicles”.

<sup>14</sup>This indicator consists of the following variables: “optimize and reduce the consumption of energy”, “encourage saving and promote energy efficiency”, “adapt the form of the city to the bioclimatic conditions”, “take advantage of the sun and wind in buildings and exterior spaces”, “design urban structures that are compatible with centralized heating systems”, “promote the use of renewable energies”, and “promote the local production of energy”.

infrastructures that are compatible with centralized heating systems” is only regulated by the Canary Islands, and “adapt the form of the city to the bioclimatic conditions” in the Canary Islands, Catalonia, Galicia and Rioja.

## *2. Optimize and reduce the consumption of water*

The regions that are most constant in their regulation of almost all the variables of this indicator<sup>15</sup> are, in order of descent: the Basque Country, the Valencian Community, the Canary Islands, the Balearic Islands, and Castile-León. The first variable, “optimize and reduce the consumption of water”, is regulated extensively by State and regional legislation, except in the case of Murcia and Navarra, which do not include it in any of their laws. Murcia does not list this variable in any article of the legislation that regulates this indicator. Navarra only regulates the variable “rehabilitate and treat the natural courses of water”. The variable that refers to “promote building types with a lower demand for water” is only provided for by the Canary Islands, and that which refers to “utilize rainwater retention and filtering systems” only by the Balearic Islands, the Valencian Community and the Basque Country. A variable that is as necessary as “reduce losses in the distribution networks” is only provided for in regional regulations of the Balearic Islands, Castile and La Mancha, Castile-León, the Valencian Community, and the Basque Country.

## *3. Minimize the impact of the building materials*

On applying the evaluation analysis we can see that the marks for this indicator are very low. The regions best situated are the Canary Islands, the Balearic Islands, and Galicia. Variables not provided for are: “employ building techniques that facilitate reutilization”, “promote the shared use of infrastructure networks”, or “promote the use of easily recyclable material”.

### **III.1.5. Criteria of action to reduce and manage waste**

#### *1. Reduce waste*

There are cases, such as that of the legislation in the Canary Islands, which regulate all the variables of the indicator<sup>16</sup> in a uniform way. Others, such as Extremadura and Navarra,

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<sup>15</sup>The variables of the indicator are the following: “optimize and reduce the consumption of water”, “reduce losses in the distribution networks”, “promote building types with lower demand for water”, “promote efficient irrigation systems”, “give incentives to the incorporation of rainwater collection in building design”, “utilize rainwater retention and filtering systems”, “treat and rehabilitate natural water courses”, and “promote the use of permeable paving”.

<sup>16</sup>This indicator consists the following variables: “reduce waste”, “promote selective waste collection”, “proximity of user to collecting systems”, “promote reserves for compost, and treatment of organic waste”, “utilize systems for taking advantage of greywater”, and “promote recycling and reutilization”.

regulate none of the variables. On applying our evaluation system to determine the level of sustainability, we find that the regulations of four of the regions (the Canary Islands, the Basque Country, Cantabria and Galicia) are close to the average. Outstanding among the variables for their greater diffusion are: “promote recycling” and “promote selective waste collection and separate cleaning networks”.

## *2. Manage waste*

There is a high degree of awareness of the importance of this indicator<sup>17</sup>, as there is with the first in this area. As a result, it is included in the majority of regional legislations. Of all the variables, the most outstanding in importance is “reduce emissions and the dumping of waste”, which appears to be a concern of all the regions and regulated by each one. In the Canary Islands, the two Castiles, Catalonia, the Valencian Community, and the Basque Country there are plans to include it in more than seven articles of the different regulations. The other variable that is widely regulated is “manage waste in order to reduce its impact”. Although this is not regulated by all regions, it is extensively so in Andalusia, Castile and La Mancha, Castile-León, Galicia, Murcia, and the Basque Country. In contrast, outstanding in a negative way is the lack of regulation by half the regions of a variable that is as important to the environment as “make the treatment of toxic waste compulsory”.

### **III.1.6. Criteria of action relating to social cohesion**

#### *1. Favour cohesion of the social fabric and prevent exclusion*

The self-governing regions which regulate this indicator<sup>18</sup> most extensively are: the Canary Islands, the Basque Country, Castile-León, and Galicia. Those with fewest regulations are Murcia, Cantabria and Rioja. The most regular and constant in its provision for all the variables is the Canary Islands, followed by the Basque Country, Catalonia, Andalusia, Castile-León, and Galicia. The variable “promote the setting up of associations” is only regulated by the Basque Country, and “reserve space for non-profit making organizations” by the Canary Islands. The variables most regulated by the regions and the State are: “favour cohesion of the social fabric” and “prevent exclusion”. The variable “promote the population’s identification with its environment (heritage)” is regulated by all regions except

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<sup>17</sup>This indicator is made up of the following variables: “manage waste to reduce its impact”, “make the treatment of toxic waste compulsory”, “manage waste generated by building and demolition”, “construct wastewater treatment systems that respect the environment”, and “reduce emissions and pollutant waste”.

<sup>18</sup>This indicator includes the following variables: “promote associations”, “promote the identification of the population with its environment (heritage)”, “favour access to housing”, “favour social complexity” and “reserve space for non-profit making organizations”.

Cantabria. The variable “favour access to housing” is extensively regulated by all except Murcia. A high degree of interest in controlling this last variable can be observed. In nearly every region it appears in more than 7 articles in the different regulating legislation.

## *2. Make the social fabric complex*

State legislation only regulates “encourage economic exchange with the rural environment” and “promote a minimum percentage of activities of approximation”. The first is provided for in law 45/2007 for the sustainable development of the rural environment, which proposes incentives for economic diversification in this environment, including measures that have among their objectives the promotion of rural tourism (with preferential treatment for the promotion of sustainable tourism in priority rural areas), support from the business sector, and modernization of commercial public facilities. Regulation of this indicator<sup>19</sup> is scarce, and completely lacking in Madrid, Navarra, Rioja, the Valencian Community, Andalusia and Murcia. The most uniform is that found in the Canary Islands, which is the only regulation that provides for all the variables without exception. Some regions regulate only one of the variables, and pay no attention to the others: the Basque Country encourages “economic exchange with the rural environment”; Galicia and Asturias promote the “variety of uses in each neighbourhood”; Extremadura encourages “activities that favour diversity of use”; and the Balearic Islands aims to improve the “offer of, and access to, the services and facilities of each neighbourhood”. This gives us an idea of the sporadic and largely unregulated status of this indicator. There is neither uniformity nor consistency in its application.

### **III.1.7. Criteria for action relating to governance**

#### *1. Promote administrative transparency*

This is the most regulated of all indicators<sup>20</sup>. The two variables that are extensively regulated by all regions are: “offer access to information” and “establish cooperation procedure between administrations”. And the variable whose regulation is deficient in some regions is: “promote administrative transparency”. This is not regulated in Aragon, Cantabria, Extremadura, Navarra, Rioja and the Valencian Community.

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<sup>19</sup>Within this indicator the following variables are to be found: “promote a variety of uses in each neighbourhood”, “improve the offer of, and access to, the services and facilities in each neighbourhood”, “encourage economic exchange with the rural environment”, “promote a minimum percentage of approximation activities” and “encourage activities that favour diversity of use”.

<sup>20</sup>Made up of the following variables: “promote administrative transparency”, “offer access to information” (including technical data and reports), “offer two-way channels for the flow of information” and “establish cooperation procedure between administrations”.



### 2. *Favour the training of the citizens*

This indicator<sup>21</sup> is very irregular. While “favour the training of the citizens” and “promote education” are regulated without exception, the other variables show many gaps. Thus, “develop courses, workshops and debates on urban planning”, or “support the drawing up of Agenda 21” are provided for by four or five regions. Among the regions with few regulations for this indicator are Galicia, which only regulates “promote environmental education and awareness”; Navarra, “favor the training of the citizens”; and the Valencian Community, which regulates the latter and “producing informational materials”.

### 3. *Integrate participation in urban planning*

An indicator<sup>22</sup> that is very irregular in its variables (the first is extensively regulated in all regional legislation, while the rest have practically no regulation at all), but homogeneous in terms of the behaviour of the different regions. All follow the same criteria. There are no plans to “integrate Agendas 21 in urban planning”, the “monitoring and supervision of the plan” and “writing of the plan” in the near future.

## CONCLUSIONS

By evaluating the indicators of sustainability in the different areas of action, two types of analysis can be established according to a focus either on the thematic areas or on the self-governing regions.

If we focus on the thematic areas, two clearly differentiated groups can be distinguished with regard to the amount of legislation that exists. For the first group, which consists of the areas of sustainable territorial and urban development, the city and its natural surroundings, and the sustainable management of natural resources, there is a large amount of legislation. (These three areas, taken together, obtain a mark of 83%). For the second group, which consists of the areas of gender and the struggle against social exclusion, housing and transport, and accessibility, there is hardly any specific legislation at all. Such a marked difference, with no intermediate areas, shows that the current legislation only develops

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<sup>21</sup>This indicator has the following variables: “favor the training of the citizens”, “develop specific informational material”, “develop courses, workshops and debates on urban planning”, “promote environmental education and awareness”, “support the drawing up of the Agendas 21”.

<sup>22</sup>This indicator has the following variables: “integrate participation in urban planning”, “in the diagnostic process”, “in the taking of strategic decisions”, “in the writing of the plan”, “in the passing of the plan”, “in the monitoring process” and “supervision of the plan”, “Integrate the Agendas 21 in planning”.

instruments for the protection of the natural environments and the creation of urban plans. It does not deal with more complex and inter-connected problems which, by their very nature, do not contribute to direct economic growth (in terms of GDP). Areas relating to the urban environment and to social development are relegated, and only begin to be taken into account when it is necessary to comply with European Union directives.

If we focus on the different self-governing regions, we can see that the most extensively regulated region is the Canary Islands. This is above the average for Spain in all areas, with an average total that places it at double the national, especially on matters of transport and accessibility. At the opposite end of the scale is Murcia, where the legislation is barely half the national average. Although the similarity of the regions at the two extremes in terms of the size of their populations and their provincial capitals might suggest otherwise, the transfer of responsibilities from national to regional government generates heterogeneity. There is no greater degree of legislation in the regions with the largest amounts of urban areas, e.g. Madrid or Catalonia.

On the basis of the legislation studied, and the low marks it achieves on the scale, the courses of action that need to be adopted for legislation that facilitates the advance towards increasingly sustainable cities are as follows.

To begin with, state legislation on land use should be linked to the environmental legislation of the self-governing regions. Decentralization to the latter of all responsibilities in matters of urban planning, organization of the territory and housing creates administrative divisions that do not correspond to the environmental areas. In addition, one of the main problems of urban planning in Spain is the bad practices that have emerged around it due to the link between rights of ownership and planning. This enables local corporations to create increases in the price of land through reclassification. The proliferation of hierarchical plans leads to an inflexibility that the new plans should work to correct, including the way they are managed according to their territorial area, and the socio-economic and environmental effects they might have.

The most developed planning in Spain is the General Plan of Urban Organization (PGOU in Spanish), which is concerned with delimiting urban land and land for development. However, it does not manage this land as a whole, given that most self-governing regions lack Territorial Plans. In order to be able to deal with problems and effects of a territorial nature, the plans made should involve both short and long-term decisions, have a system of revision

that is much more flexible, and involve the general public to a much greater extent. They should be accompanied by the creation of “Territorial Watchdogs”, which will monitor the evolution of plans through evaluation using indicators of impact.

Another important function will be to educate the population on these matters in order to increase its participation in the creation of new plans. The bodies responsible for the drawing up of the Plan should include, as part of it, the work of education and of the dissemination of aspects relating to urban planning that will revive the awareness and participation of the general public. The information provided by the present study makes it clear that in areas such as these, regulation by the self-governing regions is urgently needed if a level of sustainability is to be reached.

Finally, it is important to take into account that the majority of Spanish cities would have greater possibilities of turning themselves into sustainable cities in the future if they made a series of changes which would allow them to increase the opportunities for contact, exchange and communication between those involved, without compromising the quality of urban life and the load capacity of their peripheral systems. These are the requisites for obtaining a cohesive social existence and a competitive economic structure that is sparing in its use of land, energy and material resources. To achieve this, the central government, self-governing regions and local government must agree to consider IUR as an opportunity for the transformation of cities. They must also accept that the better they manage economic stability, social integration, improvements to the physical environment and to the transport infrastructures of deprived areas, the greater chance there will be that, in the future, Spanish cities will continue to be spaces of social progress, growth and innovation.

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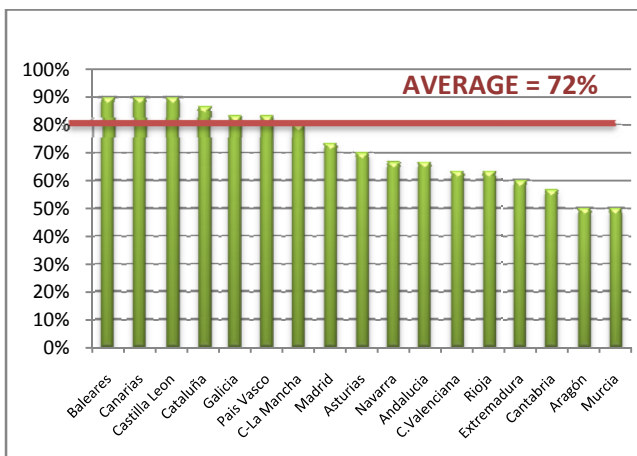
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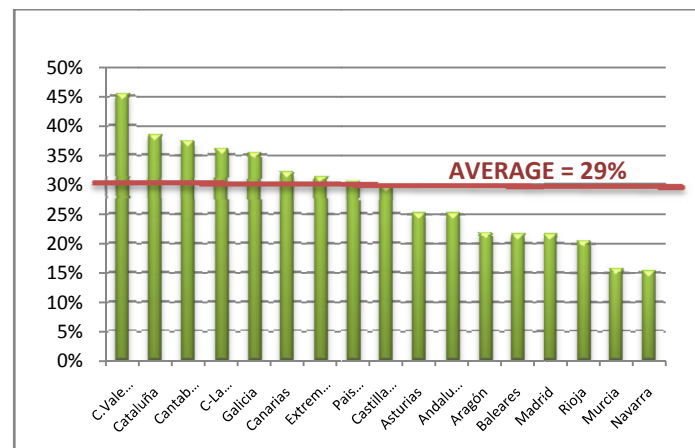
## Appendix 1: Indicators of sustainability in Spanish self-governing regions

Figure III.1.1. Criteria of action relating to the surroundings of the city



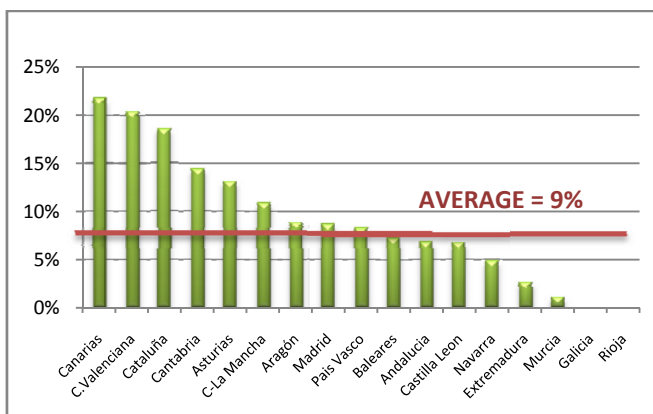
Source: The authors, on the basis of data from the *White Paper on Sustainability in Spanish Urban Planning*

Figure III.1.2. Criteria of action within the city sphere



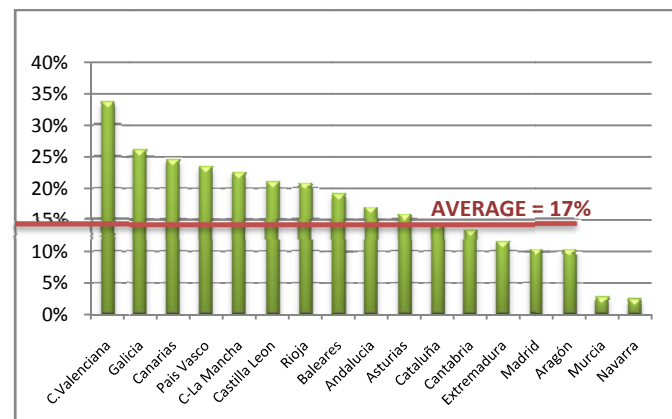
Source: The authors, on the basis of data from the *White Paper on Sustainability in Spanish Urban Planning*

Figure III.1.3. Criteria of action relating to transport



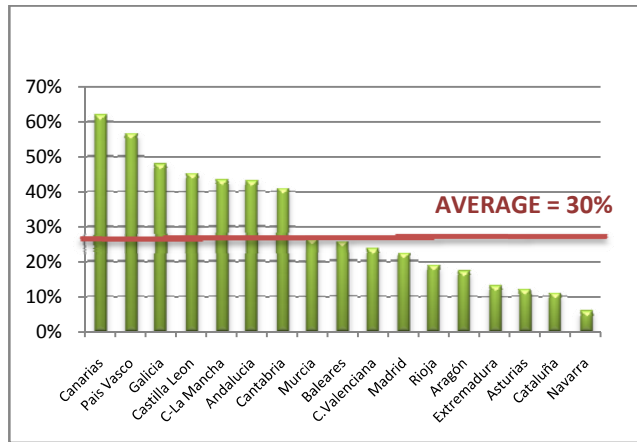
Source: The authors, on the basis of data from the *White Paper on Sustainability in Spanish Urban Planning*

Figure III.1.4. Criteria of action relating to resources



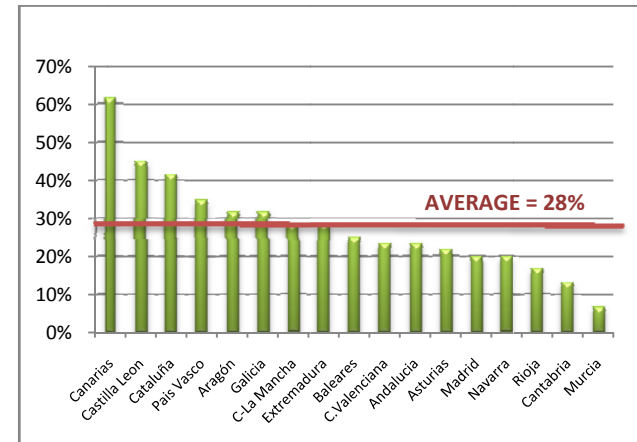
Source: The authors, on the basis of data from the *White Paper on Sustainability in Spanish Urban Planning*

**Figure III.1.5. Criteria of action to reduce and manage waste**



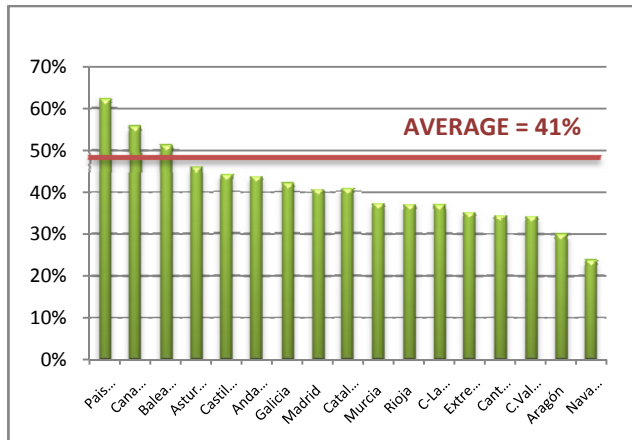
Source: The authors, on the basis of data from the *White Paper on Sustainability in Spanish Urban Planning*

**Figure III.1.6. Criteria of action relating to social cohesion**



Source: The authors, on the basis of data from the *White Paper on Sustainability in Spanish Urban Planning*

**Figure III.1.7. Criteria for action relating to governance**



Source: The authors, on the basis of data from the *White Paper on Sustainability in Spanish Urban Planning*