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CHAPTER 2

The Adaptive Territorial Management - Design a Management System towards a Resilient Urban Development

Luís S. Grave

Introduction

The Issue

The urban system is a permanent complex construction, with the aim of conditioning society, its culture and activities more susceptible to various influences and constraints. Induced dynamics occur within its development, determined both by prior planning, and by unforeseen and adverse externalities to thought out plans, leading to instabilities or even processes with a negative tendency. This was the case with the recent economic and financial crisis which resulted in a context of stagnation or even recession for urban development in the consolidated city and the urban space in expansion or consolidation. The findings here are reflected in the following statement of amazement: could it be that nobody foresaw this, and why? It is my belief that it indeed matters that policy in general and spatial planning as governance of cities acquires the capacity to foresee, as far as possible, the distant consequences of its own decisions and the effects of externalities on urban development, that is, that for a sustainable and resilient urban development, this can be carried out using a permanently adapted strategy for a preventive and not merely positivist prospective.

However, the city, from the territorial point of view, consists of an urban system with a complex multifunctionality and structure. Therefore, in order to achieve the aforementioned governance of sustainable and resilient cities, this should be supported by a management system capable of efficiently managing that complexity. However, either due to the inefficiency of its practices or due to the ineffectiveness of its results, it can be seen that territorial management has shown itself unable to anticipate and monitor the mutability of urban systems (forms and functions) induced by actual transformation dynamics. The positivist planning that has lasted has failed, since it is based on policies and instruments managed segmentally and sectorally, where the definition of strategies does not correspond to a prior systematic assessment, as well as the definition of strategies not corresponding to actions undertaken, showing, through the disconnected state of the environment and the functioning urban systems, that it is urgent to have a management system supported by planning based on a prior systematic assessment of the contexts which are the object of management action.

Objectives and organizational structure

The growing complexity of urban systems requires approaches which traditional planning has not provided. To respond to the complexity, uncertainty and risks brought about by globalization and technological progress, studies involving the future, scenarios and strategic planning have been seen by some as a viable alternative, increasingly used as creative and cooperative basis for decision making processes (Bina et al., 2014).

Therefore, the challenge is: how to design and operationalize planning/territorial management instruments and processes capable of regulating and managing the development of urban spaces in a balanced and sustainable manner, despite uncertainties and adversities, i.e. resilient urban development?

Our starting point is the impacts, i.e. in spatial planning (SP) in a case study within a context of stagnation after induced accelerated urban growth, for which there is a need to find responses to the resulting challenge faced there. Starting from theories of self-regulated strategic planning, a search for innovative aspects is carried out through a holistic approach, within the fields of planning for uncertainty, the concepts of integrated strategic management and management performance evaluation, applied to sustainable urban planning, seeking concepts and techniques which constitute a territorial management (TM) model endowed with adaptive planning. The conclusion will summarize the benefits which can follow from the proposals developed.

A case of urban stagnation and diseconomy

Contextualization of the case study

Since it joined the European Union (former EEC), Portugal witnessed a huge boost in its infrastructure and territorial facilities. As regards infrastructure, road links improved the most. The only connection of Lisbon with the south of the country was made using the 25 de Abril Bridge, and this needed to be strengthened along with accessibilities to the Lisbon Universal Exhibition, which was held in 1998. As such, the construction of the Vasco da Gama Bridge from the location of Expo 98 completed the second connection of Lisbon to the southern motorway, crossing the south-east sector of the southern side of the metropolitan area, which was then marginal compared to the central element (Lisbon), only connected by river transport routes and with an urban occupation made up of small-sized consolidated urban agglomerations of a somewhat predictable size.

Given the singular circumstances of that situation and the magnitude of the investment, the initiative to construct the Vasco da Gama Bridge was taken significantly in advance and was highly mediatized. This was a time of urban expansion and increasing mobility through individual transportation. So, as was expected, with this new access to that subregion having been implemented, there was an impulse in the market for land and real estate in the urban centres located close to the first local accesses to this new link between the two banks of the

Tagus estuary. This was therefore, another typical case of urban expansion caused by road infrastructure.

The phenomenon of expansion was expected and even desired, so the local municipalities, when developing the respective municipal master plans (MMP), which determined the classification of land use, envisaged large perimeters of areas to be urbanised. The Government established a capital gains tax on the land and real estate markets, justified by the national investment which had occurred. We then saw that the actual administration implemented policies which, supposedly justifiable by local development and public budgetary sustainability, promoted and even focused on stimulating urban expansionism. However, the process of growth and consolidation was still taking place when the global economic crisis occurred and stagnation of that growth occurred with negative reflexes of a varied order on the environmental, economic and financial conditions of a fragmented and unfinished urban space.

The context described can be seen as one of the main case studies relevant to the support framework analysis for the design of the MT system model that has been developed here. To do this it has been necessary to focus observations on the urban centres of Alcochete, Montijo and Pinhal Novo (Fig. 1) which are the closest agglomerations to the first access points from the IP1-A12 (south side of the Vasco da Gama Bridge) and in which the urban boom caused by the new infrastructure was most notable.

Figure 1 – Location of urban perimeters under analysis



Source: Google Maps

This reflection is based on the analysis and confrontation between municipal management models (instruments and practices) used in different examples of a paradigmatic case study, assessing them and correlating them with the respective effects on spatial management and environmental and economic sustainability. Thus, the relation between the phenomenon of urban growth with different MT practices and the urban action carried out in the urban perimeter of Alcochete, Montijo and Pinhal Novo were observed, seeking to identify the trends, planning, mid-term planning and programming, that formed factors which led to the systemic anomalies which shaped the territory in those economic and financial circumstances.

The trends observed in the case study

Below the evidence identified in the examples analysed will be presented, systematising the trends observed in the MT performance.

Trends in the planning and programming of the urban space: (i) Planning with weak support concerning vision and strategic weighting; (ii) Over sizing of the space to be urbanised, at the expense of rehabilitation and bridging urbanised spaces – disqualification, fragmentation, dispersion; (iii) The widespread absence of detailed plans and other forms of urban programming; (iv) When partial use was made of PP, as happened in one of the examples analysed, there were notable contrasts in the quality coherence between the spaces developed in a distinct manner; (v) Generalised negligence regarding the financial plans in the territorial management instruments (TMI), particularly more demanding in the UP and PP, generally not present when assessing their economic viability; (vi) Poor use of the land to be urbanised, less than 50%, after 15 years following the approval of the MDP; (vii) The urban growth was as large as close to this (equal trend in the slowing of the construction space).

Trends in the effects inherent to the control and management practices for urban implementation: (i) Reduced use of programming and urban conciliation mechanisms; (ii) Reduced use of management methods and urban operation control mechanisms; (iii) Lack of consideration of externalities related to land market trends and urban real estate products; (iv) Indefinitely fragmented urban shape; (v) Structural anomalies in the allocation of facilities and public spaces; (vi) Excess infrastructure, without users, for an indefinite period.

The resulting trends of economic and financial management practices: (i) Absence of preventive assessment of the economic viability of municipal planning in general, urban plans and operations; (ii) Weak or absent linking between the municipal budget/investment and the municipal territorial management plans; (iii) Mismatch between the structure of the municipal accounting (POCAL) and the structure of the territorial/sectoral management system for urban development, making financial/budgetary control and management more difficult; (iv) Chronic budgetary deficit, with a cyclical dynamic co-related to local authority mandates, motivated by systematised budgetary regulation; (v) Difficulties of budget appropriation aimed at the development of the urban space, in competition with other sectors involving municipal activity, in the financial distribution of activity plans and the municipal budget.

The resulting trends for externalities: (i) Stagnation of urbanisation and construction; (ii) Surplus: housing stock vacant, supply of urban lots, expected urban land plots and subsequent

products of urbanised space; (iii) Infrastructure and urbanisation works in general, constructed or under construction, not used or not finished for an indeterminate time; (iv) Structural mismatches in the provision of facilities and functions or services involving collective use – not consolidated in certain urban areas with the facilities built being oversized regarding needs, indefinitely, others without such facilities due to a lack of justification to construct the planned facilities.

Figure 2 – Illustration of trends



Legend: (i) undeveloped infrastructure; (ii) detailed planning but without adaptive regulation; (iii) urban expansion without an urban programme adapted to the demographic growth. (iv) buildings indefinitely uncompleted.
Source: Own elaboration

What went wrong and why - an overview

Given the stated tendencies, let us now draw conclusions from what has failed, trying to identify probable explanations, especially when dealing with tendencies contradictory to the supposed objectives of the SM public policies and the formal TM system. Thus, the following have failed: (i) the SM and environmental sustainability policies, in the management of the urban

space where fragmentation and structural incoherence have been seen, as well as excessive consumption of land and negative environmental impacts, both because the new spaces were not consolidated and because the conservation of the consolidated spaces was neglected, resulting in the subsequent deterioration of the urban structures and the environment as well as a lack of coordination and imbalances in collectively used functions or services; (ii) social policies regarding housing and services to the community since the fragility of urban development control left certain constitutional guarantees vulnerable such as the right to housing since access to this was made difficult or impossible for the population due to high prices and frequently inadequate localisation; health and education since suitable appropriation for the respective facilities *in situ*, with the right capacity and at the right moments, was made more difficult; the right environment and quality of urban life faced with a disconcerting “work site atmosphere” and deterioration of the residential and working spaces; (iii) the economic and financial policies inherent to urban development, thus generating persistent or cyclical situations of both functional and budgetary diseconomy and even that of financial non-sustainability.

The fundamental reasons that we have concluded to be at the basis of these performance failures in the TM system may be summarised as follows: (i) Belief by the regulatory authority that urbanisation can be undertaken through territorial management instruments (TMI) when, in fact, it is mostly undertaken by direct urban operation without prior urban programming; (ii) Reduced use of TMI in detail and in terms of an operating programme, since it is believed that the municipal master plans will be sufficient, without a strategy including a preventive and prospective element and without a programme which considers management techniques and control of the urban growth process; (iii) Despite the TM system establishing and undertaking regular assessment of the state of the territory and the system indicating execution of plans, this has rarely happened. On the other hand, there is a notorious lack of critical assessment regarding the performance of the TM system itself, especially where the complexity of urban systems requires more efficient management, in the cities.

However, based on the same public policies and the same TM system, cases have been observed which show apparently positive results and which have become reference examples, perhaps as a result of best territorial management practices but also counting on the help of favourable circumstances, which demonstrates that the formal system is, indeed, susceptible to personal strategies or attitudes of the actors, that is, it needs to be complemented with a safe guide which reduces the margin of randomness and error in territorial management practices.

The state of spatial planning at the local level

In the tradition of urban management and planning practices, the plans have been limited, in general, to a classification of action and qualification of the urban land, followed by the policy action of use and occupation of land according to urban parameters established in the MDP, not proposing procedures involving systematic programming of urban development as well as controlled and preventive monitoring in the carrying out of this.

On the other hand, although the detailed planning translates into more concrete and objective urban proposals, enabling prior environmental assessment and public participation,

the typical delay and its mandatory format leads to its rejection most of the time, which endows it with an asymmetric or even rare character. It tends to be adopted only to fit in with the construction of a large facility or even a large urban or industrial development, through need to alter the MMP. In this way, planning almost exclusively through the MMP has served mainly to open/classify new areas to be urbanised but not in a way which has been thought out and adjusted to needs, therefore devoid of the progressive phasing of their implementation and remaining dependent on the initiative of their promoters. After having experienced the development and implementation cycle for first-generation MMPs, the reality shows that the MMP is insufficient for territorial and urban management.

Indeed, relating the dynamics and volume of production of urban space through private initiative with the tiny number of municipal urban plans, it can be assumed that urban development is rarely carried out in a coordinated and cohesive manner. Given the lack of the necessary political effort and management planning and proactivity, utilising an integrated vision endowed with a strategy, urban development is confined to the logics and interests of urban agents and land, real estate and financial markets, ending up, sooner or later, with this leading to environmental and functional imbalances and to accentuated systemic financial diseconomies. In fact, it is within this framework that one finds such a state of (lack of) planning and (non) sustainability of the territory. Planning and management of land use cannot be ignored in this structural context, with the risk of questioning its creditability.

The territorial management system and its contradictions

Given the objectives of this approach, I will now summarize the structure of the TM (TMS) system formally established in Portugal regarding municipal intervention, in terms of the territorial management legal system (TMLS). According to the legal framework of the system, we can group the territorial management instruments within the municipal area into three levels, structured in the following manner: (i) At the strategic level: the Municipal Master Plan (MMP), the Urbanisation Plan (UP) and the Territorial Action Programme (TAP), not forgetting the report of the state of spatial planning (RSSP) as an assessment-diagnostic instrument system; (ii) At the level of operative regulation for implementation and for urban programming: the municipal regulation for urbanisation and building (MRUB), the planning and management operative unit (PMOU), the Detailed Plan which can take on various formats, due to its specific or simplified nature, the implementation unit (IU), the urban regeneration programme (URP), etc.; (iii) At the level of implementation: the subdivision operation (SO) and the urban operations (UO) of allotment, urbanisation and building.

For the objective in question, in accordance with Grave (2009) and based on empirical recognition from *praxis*, we will list some contradictions found between what the legal system establishes for the plans and what in fact happened in practice planning and implementation:

- The TMS establishes that municipal plans must comply with a strategic reference framework and the supramunicipal instruments (PNPOT, PROT, etc.) define strategic or regulatory guidelines that should be included in the municipal plans, but they are not, indefinitely, in conformity with that referenced and poorly define a vision and

development strategy with concrete and well-formulated objectives, nor goals and indicators regarding implementation;

- The TMS lays down that municipal plans should form part of the financial and implementation programme, but the actual TMLS classifies these as elements accompanying the plan, as if they do not form an intrinsic part of the latter, thus ending up having a pro forma nature and so becoming undervalued by agents when drawing these up (promoting body, technical team, monitoring committee) and, furthermore, in their use (land authorities, management team) when implementing the plan;
- The TMS is based on the TMI but urban growth prevails through asymmetric urban operations, even with a large scale and impact, not subject to prior detailed planning or programming, thus making processes quicker and less complicated, which is facilitated by the (lack of) connection between the TMLS and the EULS, making a rule of what should be an exception;
- The TMS provides for the establishment of implementation units as an implementation mechanism for programmed urbanisation but do not concretely and objectively specify their programming requirements and the documental organisation of that instrument, merely laying down that the IU may or should be listed within the UOPG, detailed plan (DP) or in any place, leading to this important instrument not being used;
- The TMS provides for a typology of grounds for refusing intended urban operations but its explanation is reproduced in the plans and ongoing management made based on the vague, non-specific typology contained in the EULS;
- The TMS determines the application of systems involving indicators and the monitoring of the state of the territory (RSSP, network observations, etc.), essential for a more preventive and timely planning, but it is mainly absent and there is no registration and public dissemination of that instrument.

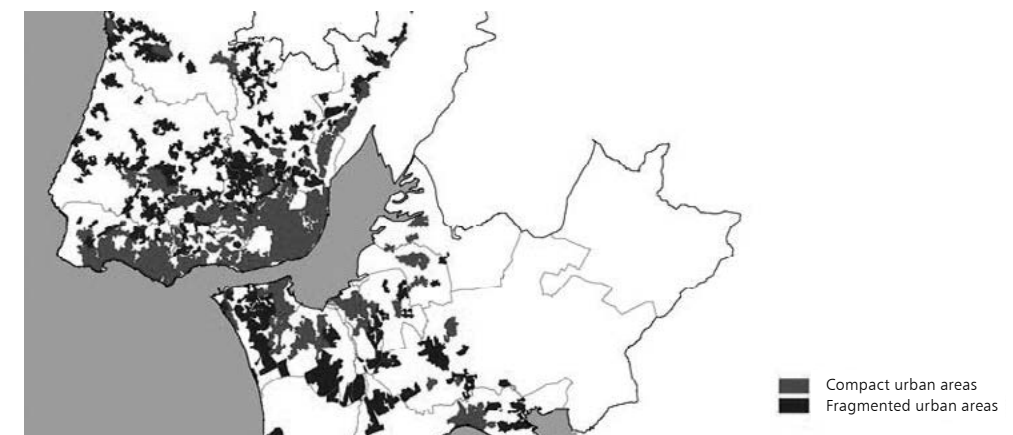
However, the difficulties of territorial planning are felt internationally, even in countries with extensive experience and a sense of innovation in this area. A systematised assessment concerning local territorial planning practices in the United Kingdom (Department for Communities and Local Government, *Spatial Plans in Practice: Supporting the reform of local planning – Final Report*, London, 2008), confirmed this idea and from this some of its conclusions have been extracted and translated into the following necessities: (i) More plans as instruments to manage change but with a long-term strategic approach; (ii) Plans drawn up and managed based on assessment proven by data and evidence; (iii) Plans drawn up in partnership with and including the greater involvement of stakeholders from the various sectors in the same territorial area; (iv) Suitability recruitment and professional training providing planning professionals with new competences (data, analysis, creativity and facilitation, project management, implementation and assessment); (v) Responsibility for drawing up territorial plans should be attributed to multidisciplinary teams placed in a central position within the local authority and not within one department.

On the need for adaptive territorial management

(Un)regulated urban growth, its (dis)equilibria and (dis)economies

The model of the Fordist industrial city, marked by a compact and solid structure, was reconfigured with the coming of the tertiary sector of the economy, the generalisation of the road infrastructure and the increased degree of motorisation, with two types of urban occupation coexisting, namely one supported by public transportation, favouring a concentration along the routes served and their immediate surroundings, fostering high densities and multi-family typologies; another based on the motor car, encouraging a distended and fragmented occupation, marked by deficient linking of the urban fabric which was not very well structured, with multiple uses and varied typologies. The city limits gradually extended and took on ever more imprecise contours. These dynamics affected the compact consolidated city, the population, employment and functions which went down and also physically deteriorated. Extensive urban occupation demands resources and mobility, while stimulating “urban waste” (early withdrawal from urban fabrics with facilities, and multiplication of new infrastructures which remain indefinitely underused (Pereira, 2009). For that reason, this is challenged in the light of the principles of sustainability.

Figure 3 – Urban occupation in AML



Source: PROT AML, change Proposal 2010

Considering the Lisbon Metropolitan area (LMA) as a paradigmatic example, the 2011 Census showed the continuation of previous trends in the reduction in the number of residents in the city centre and growth in the municipalities of the periphery, along with average ageing in Lisbon and average rejuvenation in the periphery. These trends have occurred for around two decades, as a result of a combination of factors of a varied nature, both in economic and financial terms as well as sociological, but where governance action plays its part. The city of Lisbon has had differentiated growth dynamics within it. The city expanded its administrative limits despite

not expecting more than just maintaining its 2001 demographic level. The bordering crown and related axes *to the north and west of Lisbon* along with the *southern river arch* were the parts of the metropolitan area of Lisbon, from one side and the other of the Tagus estuary, which showed themselves as the cause and effect of the main phenomenon of demographic mobility, which took place within the central nucleus of the metropolitan region.

The accelerated urban growth had, and will have until it attains its utopian consolidation, characteristics of fragmentation and disconnection, congestion in terms of mobility, asymmetries in the allocation and quality of public services and environmental conflicts. It was the crown areas which witnessed the largest population growth in the LMA. On the other hand, the highways formed the determining factor in terms of the available localisation options and, as a result, induced the spatial orientation of urban growth. In Figure 3 it is easy to co-relate the urban growth axes with the major transport infrastructures. The market for the supply of urban products unveiled opportunities brought about by public investments in accessibilities and transport and promoted an offer which ensured a strong appetite for demand.

Along with the public investment in accessibilities, urban promoters played their parts in local accessibilities. However, these promotional initiatives have been random and disconnected within time and space. Hence it is the case that, despite certain efforts at coordination undertaken by each municipality, they are far from achieving full cohesion and, at the intermunicipal level, the disconnection is striking. The actual carrying capacity of the infrastructure and urban service networks, from the accessibilities and public transport to the supply and sanitation networks, inherent to the first stages of growth, was overloaded with the subsequent urban and demographic growths, which was reflected in the increasing congestion, potential breakages or the quantitative and qualitative insufficiency of services. As for networks of amenities and social spaces with a collective use, the investment and construction of which, as a rule, did not come down to the urban promoters, the situation would show itself to be more dramatic and have devastating economic and financial effects.

This phenomenon of tending towards non-sustainability is contrary to social and urban cohesion where, as is natural and expectable, certain areas of the city, due to localised dynamics, have regenerated or even increased their level of quality, generating, in contrast, phenomena of urban segregation. This tends to produce a city made up of an archipelago of urban areas of quality, surrounded by deteriorating or run-down urban areas. As a result of these dynamics from contradictory effects, opposing the trend towards consolidation in the recent city towards the trend regarding the deterioration in the consolidated city, the installation of a scenario of duplication of costs can be seen: the first represents the investment effort in its consolidation of the urban system which is still incomplete; the second represents the investment effort in the recuperation and regeneration of the consolidated urban fabric which has entered into a process of decline. It is easy to conclude that a city, seen as an extended shape, functions as a system of communicating vessels, in which, when load is borne or dynamics are installed in certain parts, the others will react in a contrary sense, since, in an urban system, effects are not uniformly distributed, as they depend on sectors and the governance factor.

The economic and financial issue

The systems referred to raise a fundamental economic and financial question with territorial impact both from the view of private initiative as well as public initiative. However, it is important here to highlight the perspective of public initiative at the municipal level, since it is the municipal management of the territory that is being discussed here.

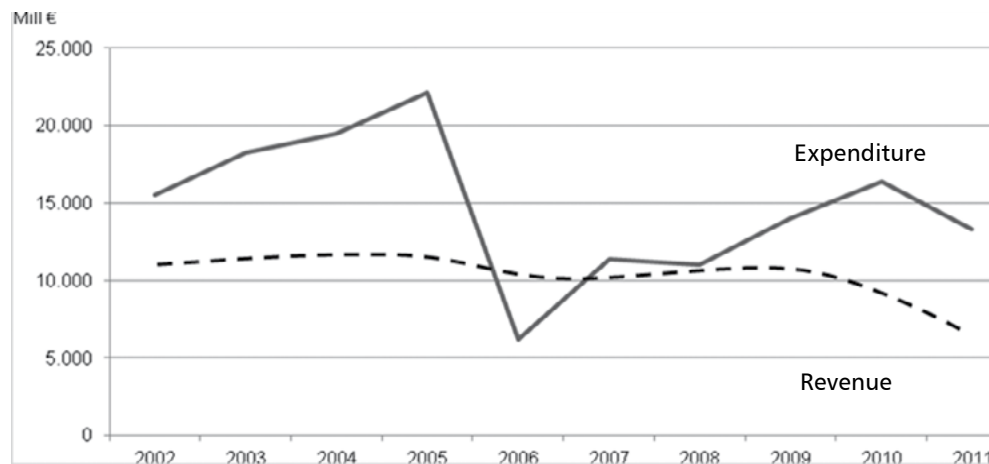
The municipal management of the territory and the land market are driving and conditioning factors for the development and the quality of the urban space (Grave, 2000). The urban TM is played out, from the beginning, in the land market. Various authors recognise that the land and speculation related to its value are the main drivers of economic and financial crises. What is certain is that "land prices have been ignored by the economists (...) the fact that the land remains an obscure and insignificant layer in economic theories leads to these not having the capacity to predict depressions caused by real estate bubbles" (Gaffney, 2009: 8), quoted by Henriques (2015: 20).

In fact, the issue of territorial management and dynamics, and in particular the urban economy, has been brushed off in academic discussion and even in TM praxis. This is due to many reasons, with the most direct having to do with the absence or opacity of information (data) which can enable its structured analysis and deeper reasons having to do with the strategies of the intervening agents and regulators since budgetary constraints restrict the freedom of action of the actors in accordance with the interests driving them, which is in full conformity with the neoliberal order of which we form part. However, the context of the current crisis, which stems from a philosophy of tendential economic deregulation and belief in a permanent growth dynamics, has led to the emergence of the principle of economic sustainability.

Despite the scarce information made available, through the possible collection of territorial impact data resulting from municipal budget implementation reports within the LMA, the chart in Fig. 4 was drawn up which represents the evolution of expenditure and net income for territorial impact, in average terms, with the necessary adaptations regarding the way the accounts are structured in line with the Official Plan for Local Administration Accounting (POCAL). In the chart, taking into consideration practices recognised in the area of municipal budgetary management, there is evidence of public knowledge, such as the growing and chronic indebtedness of the municipalities, the recurrent and notorious gap between estimation of revenue and expenses and between the budget and its implementation as well as the recognised absence of integration of investments inherent to the territorial plan proposals in the municipal budget.

Looking at the average budget evolution for territorial impact, sampling considered based on data collected regarding the Lisbon Metropolitan Area, between 2002 and 2011, the following trends or signs can be observed: (i) evolution of the expenditure amount over time, predominantly higher than income, resulting in a chronic budgetary deficit; (ii) evolution of a tendency towards growth, with a drastic reduction in 2006, which is repeated in a less accentuated manner in 2011, signalling an attempted budgetary rebalancing; (iii) the years in which that reduction is observed correspond to the start of political mandates.

Figure 4 – Graphic average budget trend territorial impact to the LMR 2002-2011



Source: compilation by the author

Among the reasons which are recognised as facilitating these tendencies or cycles are: (i) the systematic lack of preventive assessment of economic viability of municipal investments in general and investments earmarked for plans in particular; (ii) the lack of the application of management and control methodologies which ensure a balanced economic and financial performance, particularly a prospective approach for planning activities and budget which takes into account quality information which is sufficiently certain and where the link between planning and territorial impact has to exist; (iii) in order to implement the conditions described above the municipal accounting structure (POCAL) has to be linked and made suitable to the TM sector structures.

Spatial management public policies

This framework of concerns has stimulated the search for alternative urban models which are less predatory on resources (land, energy, landscape, agricultural and forest areas of biodiversity), supported by a more sustainable mobility. The first proposals arose in the USA with the New Urbanism (1980s) and later with the Smart Growth and Low Carbon Cities. In Europe, initiatives have proliferated, associated with Urban Renaissance. In the United Kingdom, a working group set up by the government (Urban Task Force) produced a reference document (Rogers, 1999); in the European Union there have been successive guiding documents - Green Book of the Urban Environment (1990); Aalborg Charter (1994); the Aalborg Commitments (2004), Leipzig Charter (2007), Toledo Declaration (2010), and Cities of Tomorrow (2011). The guidelines recommend urban models based on contention at the expense of expansion, in revaluing the concept of proximity, in multifunctionality and sustainable mobility.

The Framework Law for Spatial and Urban Planning (LBPOTU) defines principles and objectives in defence of the new urban paradigm. In the same vein, the National Programme

for Spatial Planning Policy identifies unplanned urban expansion as one of the problems of spatial planning. In addition, the Regional Plans for Spatial Planning in force take up the fight against urban fragmentation and dispersal, through guidance regarding the applicable norms for municipal plans relating to spatial planning, and, in particular, restricting expansion to needs resulting from economic and social dynamics in ensuring their programming, and promoting the reversal of urban perimeters when justified, and restricting building in rural areas. In fact, the LBOTDU lays down that it is up to the municipalities "to carry out coordinated and programmed implementation of their territorial planning instruments". This envisages a set of instruments to operationalize plans (Cunha, 2012: 283). However, use of programming tools is not the case. We are led to conclude that the LBPOTU and the TMLS end up having a reduced effect at the municipal level. These regimes were subject to a recent reformulation which emphasised the imperative and restrictive nature of those guidelines but, on the date of publication they had been recently approved or were in the final stages of drawing up most of the MMPs. As a backwash, most of those plans will remain in force until their future revision (10-year period), with the extensive underlying spatial models remaining valid.

It is necessary to discuss the validity of the processes as well as the planning and management instruments in force. It is no longer possible to plan for unrealistic population growth, arguing for oversized urban perimeters, delegating the urbanisation initiative to the holders of the land, and keeping local administration with the passive role of regulatory verification. Given the existing situation, urban development must be guided by three principles: restructuring and improvement of the fragmented city, regeneration and revitalisation of the consolidated city and contention of the emerging city, in line with the sustainability of the urban conjuncture as a whole. But how can this be done?

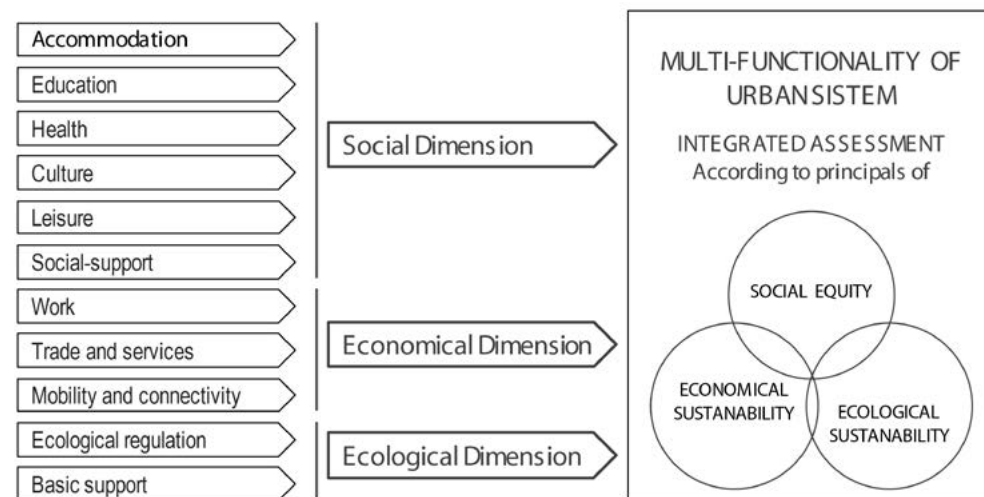
The management of the complexity of the urban space - which needs

Urban multifunctionality

The city has numerous plans, availability of resources, social and cultural flair, comfort and security, the exchange of goods and services, etc. In the meantime, it has been structured and has become specialised according to living, work, leisure and sociocultural representation. It is spatially segmented and socially stratified. Specialisation has become second nature to urban individuals, a trend that has not stopped growing. As Rossi (1982) mentions, the confirmation of the city is the result of two major systems: that of the city as the product of functional systems creating its architecture and the city as a spatial structure. Guiomar et al. (2007) states the following essential characteristics of the urban phenomenon: morphological – the form of the urban centre; functional – the functions inherent to the urban elements; structural – those relating to the support structure of urban systems. Each part or element does not exist alone but within the global system. Therefore, these elements should not be thought of and managed individually. In short, the urban space is intended to provide, within a structured, efficient and sustainable form, the environmental, social and economic conditions of comfort for its citizens.

Urban multifunctionality consists of a set of functions housing different functional attributes of the community. Urban functions must be carried out in a harmonized manner and with a view to the balanced and lasting satisfaction of ecological functions and the needs of urban users. They should be organised and structured spatially and functionally as a function of the hierarchisation of the urban system, suitably multicentred and hierarchised. The European Commission (1996) recommends the Principle of urban management - urban management for sustainability is a political process requiring planning and which has an impact on urban management. The process of sustainable urban management requires a series of instruments targeted towards ecological, social and economic aspects seeking to provide the necessary base for their integration. Given this, the TM of complex urban systems should be configured as a function of the sizes in which the fundamental attributes of the urban space are structured. According to Grave and Vale (2014), urban multifunctionality may be summarised according to its social, economic and ecological dimensions, involving the following attributes: (i) Social dimension – shelter, education, health, culture, leisure, social support; (ii) Economic dimension – work, trade and services, mobility and connectivity; (iii) Ecological dimension – regulation, support (Figure 5). The variables of each attribute of the urban system are determined through the elements (spaces and functional systems) which embody the respective functionalities of qualities considered most determinant for the satisfaction of the needs and social aspirations and ecological contingencies and, therefore, those which are critical for the verification of the respective performance in the systematic strategic assessment procedure.

Figure 5 – Diagram of the multi-functionality and integrated assessment of sustainable urban system



Source: Prepared by the author

The globalization of the economy has strengthened the role of cities in the new knowledge economy and creative economy, implying changes in urban governance and changing develop-

ment priorities, not always compatible with the priorities of social and territorial cohesion (Vale, 2007). In this context, there have been many recommendations and policy directives for sustainable development as a support for human activities: The Leipzig Charter mentions that "We strongly support the EU's Sustainable Development Strategy, (...), with the objective of protecting, strengthening and further developing our cities. In doing so, all dimensions of sustainable development should be taken into account at the same time and with the same weight. These include economic prosperity, social balance and a healthy environment. (...) In the long run, cities cannot fulfil their function as engines of social progress and economic growth (...) unless we succeed in maintaining social balance within and among them, ensuring their cultural diversity and establishing high quality in the fields of urban design, architecture and environment."

Strategic governance

An urban space is created in five phases: land classification and qualification, availability of land on the market, land restructuring, creation of infrastructure, and building. In the absence of control, this would probably take on another order. This progression in creating urban areas is determinant for the coherence of the urban fabric, although the Administration tends to open/classify new urban areas without considering needs, not interfering through the programming of its gradual implementation and being dependent on the initiatives of the promoters.

For effective control of urban development, it is not enough to establish the use of the land nor the mechanism for the programming of urban land, always susceptible to degeneration from random external pressure factors. To set the direction of urban growth and prevent the aforementioned randomness, they can play a strategic role in setting up the infrastructure and the tactical location of public investments (Henriques, 1990). Other authors follow this logic of action, such as Pardo et al. (2000), mentioning an active land policy beyond mere urbanisation and supply of constructed spaces depending on the options of promoters and also that the land to be urbanised should be established in coordination with the creation of infrastructures for general services and transport networks defined by the administrative authorities, through concerted actions of urbanism and infrastructures, urban regeneration and environmental infrastructures. It is up to the municipalities, as operative managing authorities for urban development, to take on municipal planning and drive its mediation with socio-economic agents.

Having defined the strategy, the instruments have to be created which, firstly, conceive the structure and urban form with the objectives in mind and, secondly, contain the operative mechanisms that will construct the *physical system* and gradually and effectively reach those objectives. These mechanisms translate into programming tools (the tactical action), which prevent potential randomness or interests contrary to the publicly defined strategy. Therefore, so that the territorial development takes place within sustainable parameters, both from the overall ecological viewpoint and urban ecology, it is necessary to ensure a controlled urban development where, while preserving freedom and individual interests, collective interests in terms of patrimony, the environment and integration and social coexistence can be ensured. An organizational system for coherent urban development has to be established, supported by a global strategy for the territory which brings together local interests and wishes with the supramunicipal framework.

Thus, in the local TM process, measures should be taken in the following stages of operation:

In the strategic plan: (i) Ensure a dynamic of local development, favouring global management of the urban space preventing cost redundancy, through governance which is both strategic and operational; (ii) Implement variable urban management regulation for different territorial areas based on circumstances.

In the regulation plan for agent practices: (i) urban development through prior assessment of needs, of the management of a land grant for urbanisation and careful planning of the general infrastructure networks and collective amenities; (ii) Impose the principle that urban plans and projects should show their economic viability and ensure the programming of their implementation and funding.

In the sectoral and detailed planning, programming and project implementation: (i) Focus on the urban projects, plans and sectoral programmes, managed in connection with the annual activity plan and municipal budget; (ii) Allocate urban programming subject to the provision of land to be urbanised to the joint assessment of needs and availability in the consolidated city.

In the management, negotiation and contracting plan: (i) The urbanisation initiative should bring together contracted synergies between the various socio-economic agents and the administrative authority; (ii) The administrative authority assumes proactive leadership through a firm urbanisation programme based on negotiation and contracting with the agents.

In monitoring the state of the territory and the governance performance level: (i) Develop monitoring systems for the state of the territory and the degree of implementation of the TMI, for permanent surveillance of the territorial and socio-economic dynamics; (ii) The system of indicators should be structured along three axes + one: environmental, social, economic and governance.

Proposals for an adaptive territorial management model

Theoretical assumptions

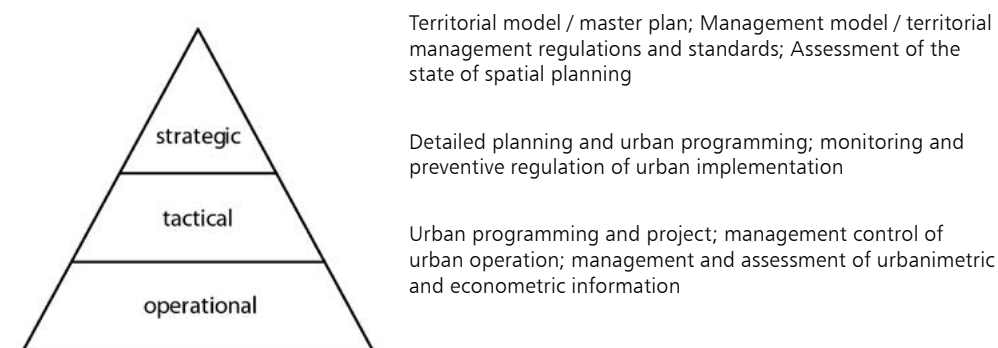
Urban multifunctionality is based on a relationship of mutual cause and effect between its topo-morphological structure and the nature of the services to be provided. Efficiency and accuracy of management in territorial governance is essential for all of this. Demographic concentration requires the planning and implementation of public policies to ensure quality of life and environmental conservation, otherwise urban chaos and a deseconomy of resources will occur. The sophistication of structure and territorial development led to the need to carry out *planning*, through the act of designing and programming actions within time and space with physical effects with functional and sustainable performance with a framework of

interdependences in which it is intended to think today about the reality of tomorrow and which forms an ongoing and interactive process with an ensuing dynamic character. However, as was made clear above, the act of designing a territorial model and programming the actions to build it, does not in itself ensure it is consistent with the dynamics, uncertainties and surprises, and also the territorial impact, which may occur in cities.

Several methodological approaches should be put in place. It is assumed that positivist planning is outdated because, as Pardal et al. (2000) mention, planning is not knowledge or foresight of a phenomenon but a component that forms part of the phenomenon. Some argue that prospective planning is no longer valid today due to accelerated dynamics and paradigm changes and one should adopt a planning by opportunity (Just-in-Time) towards tendencies. In contrast to that approach, we use the push/Fordist approach regarding planning and management (Just-in-Case) in which it is long-term planning that plays an active role in the process. While JIT is based on a more horizontal hierarchy which consists of a strong initiative, cooperation and interaction between the agents, teamwork and multifunctionality, JIC focuses on a rigid, vertical hierarchical structure which requires the specialisation and functional segregation of the controlled agents, provoking competition between them (Alfasi & Portugali, 2004).

As for the vision to be developed, the future is not written but is to be undertaken, as Godet (1996) would say. Therefore, as it is not possible to predict the future, given the uncertainty and exactitude of this, it is necessary to anticipate the dynamics of the tendencies (scenarios) and describe what is desirable. What is therefore proposed is an exercise in foresight where the future is not seen as extension of the past, since it is subject to contingencies and wills, but to visualise multiple possible indeterminate futures given the level of freedom of human action. On the other hand, planning or management of urban systems has to be carried out on different spatial and temporal scales, and at different levels of activity (Fig. 6), both in the design of the future desired and in the definition of the actual means to get there i.e. it provides a strategy, a set of behavioural rules, to enable us to reach the policy objectives. Thus, the strategic planning (development vision plan) establishes the objectives that compromise the long-term while operational planning seeks to select and apply, in the short term, the means necessary to attain these objectives (action plan).

Figure 6 – Hierarchicalisation of planning



Source: Adapted from Ferreira (2005)

However, the strategic planning methodologies of cities have already gone “from the descriptive approach to action/decision” (Ferreira, 2005), in the interpretive and critical perspective and has gone from a rationalist vision to a collaborative approach (Pereira, 2009). If the product results from a creation process, the qualities of that product are a reflection of the good dynamics and the good options taken throughout this process i.e., information, method, instruments, determination and accuracy in complying with the strategy that does not reject innovation and opportunities. This is a principle which also arises when dealing with the creation of the urban space and which will have to result from a process regulated by coordinated and attentive management of both internal as well as external factors. These factors are linked and interact according to a dynamic hypercomplexity where mediation, assessment and regulation instruments have been little or not at all utilised in the area of urbanism. That is to say, given that new reality, there must be an interactive planning for this dynamic reality, with a self-adaptable ability or self-reactive to the contextual dynamics at each moment, i.e., planning with strategic management interacting with contextual and external dynamics.

On the other hand, the City, in a meeting its plans, is constituted as a territory or system which develops supply and demand dynamics according to market logics. As such, the construction and development of the spatial or physical structures of that system needs to be managed as a complex undertaking, using pure business management techniques which have to be guided by a vision of the overall market involving and assuring conditions of efficiency, resilience, sustainability and competitiveness. However, with the fundamental distinction, that while business management involves material gain – financial as its fundamental objective, urban territorial management has the fundamental aim of satisfying the interests of society.

In summary, a *planning process constantly regulated, upstream, by a strategic reference framework, guided towards development objectives and implementation targets resilient to (social, economic and ecological) dynamics of the context and to externalities, through preventive and structured monitoring.*

Innovating mechanisms for systematically cohesive and adaptive management

This imposes the need to reform positivist planning, introducing urban TM instruments and mechanisms with new instrumental ranges, which are economically and financially important, and with properties to adapt to the trends verified at each moment and opportunity. In this sense we can systematize certain proposals, structured as instruments, according to the planning levels:

At the level of strategic planning - defining a vision and development objectives sustained by a previous assessment of the state of the territory and the potential interaction of this with tendencies from the external surroundings, which enable the consideration of development scenarios, both desirable and undesirable, to set up the guide for objectives and goals through which the operative interim planning is designed and conceived.

At the level of interim planning – linking of plans and management within an iterative and dynamic process, having as a reference *strategic planning* but being weighted by preventive assessment mechanisms for goals and externalities, which caution budgetary implementation, seeking concerted solutions, involving all actors and stakeholders.

At the level of operational management – implementation of a panoply of operationalisation mechanisms for auxiliary management for preventive assessment, for information for the agents, bringing interests together and implementing urban projects, promoting quality and environmental, social and economic sustainability.

Territorial management through prospective and integrated assessment

Integrated prospective

Planning consists of assessing the present and projecting a desired future but, as it is not possible to predict the future, and given the uncertainty of the exactitude of this, one can and should anticipate the dynamics of trends and describe what is desirable (setting scenarios). What is therefore proposed is an exercise in foresight where the future is not seen as an extension of the past, since it is subject to contingencies and wills, but which visualises multiple possible indeterminate futures given the level of freedom of human action. An integrated planning is adopted to attain this prospective, which conceives a desired future at the same time as defining the actual means to get there, that is, it consists of: equipping ourselves, in the long term, with a strategic vision, a set of objectives sectorally set out (development vision plan); At the same time, interim planning is carried out which conceives of the rules of action and behaviour, in the short to medium term, which will enable the obtaining of the policy objectives previously defined but ensuring the maintenance of the necessary balances for the sustainability of the systems (tactical plan); At a third level, operational planning is carried out which, in the short term, seeks to select and apply the resources necessary to reach these objectives (action plan).

Currently, growing uncertainty brings new risks of failure for positivist strategic planning and a future lack of preparedness to face externalities driven by undesirable events or tendencies. Thus, (prospective) planning for the future but (preventively) weighted by ongoing assessment is crucial to sectors such as urban infrastructure networks (transport, energy, etc.), the evolution of which is strongly dependent on the short and medium term. Achieving urban sustainability will largely depend on how we manage the complexity and uncertainty of the interactions between natural systems and human systems. It is necessary to apply the exercise of Urban Prospective, through constructing scenarios - foresight is a way of structured thinking which makes it possible to project the future, control it, and (often) create it (Rogut and Piasecki, 2011), but it is also necessary to apply the exercise of Future studies which is a new discipline seeking to discover or invent, examine, assess and propose possible, probable and preferable futures (Ratcliffe and Krawczyk, 2011), both cited by Bina et al. (2014).

Integrated assessment

Support for preventive foresight is therefore systematic assessment. Featuring a set of the essential functional attributes of the multifunctionality of the urban system and its respective variables, as referred to in point 3.5.1, the integrated assessment of performance is carried out from the perspective of the effects on the recipients in terms of harmony and social cohesion and the level of effort and fair sharing of economic burdens. If this is carried out in a segmented manner it is shown to be inefficient because the simple assessment of the attributes is fragmented and does not bring together the interdependencies and effects from the perspective of the sustainability of the dynamic equilibria of the system. This assessment is therefore cross-sectional, carried out according to three principles ("filters"): *social equity* seeking to ensure the objectives of harmony and social coherence; *economic sustainability* seeking to ensure the objectives and policies concerning supply and demand dynamics of the territorial base; *ecological sustainability* seeking to ensure the imperatives concerning regulating critical interdependencies between the elements of the system and between these and the recipients, as an urban ecosystem. And so the interaction between prospective and assessment leads to regulation.

To reach an assertive assessment, a system of indicators oriented towards local strategic assessment must be set up but which is also interoperable with systems of indicators at a higher level, at a regional, national, European level, specifically the list of indicators proposed by ESPON (2011) for the purposes of assessment regarding European policies for territorial cohesion. These are based on five main axes: [1] intelligent growth in a competitive and polycentric Europe; [2] Balanced development and equal access to services; [3] Conditions of local development and geographical characteristics; [4] Environmental dimension and sustainable development; [5] Governance, coordination of policies and territorial impacts. In addition, the systems of indicators, besides converging with policy-guidelines in force, should add critical indicators for future-implementation, i.e. those which signal (alert) that, from a given moment there is an element with a trend which could potentially or probably create a risk of instability within the system and identify the sectoral areas and the TMI where adaptation regulation measures are to be taken (Fig. 7).

Complexity

The effective management of the territory and urbanism is the main factor ensuring quality of the urban space. For that reason, the planning process has to be guided by targets, the implementation of which is monitored based on a structural analysis. However, the management of urban systems is an area of hypercomplexity in which the factors and interdependences of the problems are exponential, thus requiring instruments that facilitate a coordinated management of the territory and urban systems in an integrated manner. Besides being an integrating element, the planning and territorial management process should be guided by implementation goals and regular reassessment, given the dynamics which will have occurred in the meantime, and the state of the situation and the actual previously established objectives. Therefore, this requires integrated management endowed with prospective planning based on

systematic assessment which promotes adaptive spatial planning regarding the dynamics of this multifunctional complexity, since, as already stated by Ferrão (2011), the emergence of new social, economic and environmental dynamics requires innovative solutions regarding public action coordinating actors and linking policies.

According to Bertalanffy (1975), the system or "organised complexity" may be defined as being a set of elements experiencing "strong interactions" and the general theory of systems has the aim of studying the elements which make up a system, as well as the interaction between them. Indeed, the study of each one independently does not lead to an exact conclusion regarding the system of which these elements form part. This definition encompasses a variety of realities such as an environmental system (i.e. ecosystem, urban system) or an organizational system (i.e. administration, management).

The complexity of territorial systems, due to the multiplicity of sectoral areas, the diversity of actors' strategies and numerous imponderable factors or externalities, requires the sophistication of the means of governance and reinforcing planning processes and operative management. This complexity and magnitude results in the need to think and act promptly at different levels, from the more strategic to the more operational, and at different levels of action, from the design or programming of actions until their execution, and also adding the need to register the results of the monitoring and assessment actions. "The Theory of Complexity shows that even if unpredictable, there is an order or intrinsic organization within apparently chaotic behaviour..." (Lamb, 2006, p.16), quoted by Queirós (2009) which refers, also, to these notions having been reviewed and tested, in planning processes in Portugal, the conclusions for which, furthermore, complement the idea that to obtain efficacy in these processes it is necessary to integrate factors coordinating synergy and leadership which lead to new states of maturity or balance, generating consensuses and bringing together the actions of autonomous actors, making use of tools such as collaborative platforms and information systems and territorial management support.

In accordance with the theories of strategic planning, this should be processed at three fundamental levels, namely the strategic, the tactical and the operative; (i) The strategic level, on a larger scale, has the purpose of defining the territorial model and the desired development vision; (ii) The tactical level, at an intermediate level, has the aim of defining the urban structure model translated into the various sectoral subsystems of the urban system; (iii) Finally, the operative level has the purpose of designing solutions and defining the methods and mechanisms for actual implementation and, I would emphasise, the registration of information (quantitative and qualitative data) concerning both the implementation and the state of conservation of the environment and the dynamic inter-relations between the elements of the physical system and between those elements and the social system. It is therefore the case that strategic management is processed at different levels but, however, there has to be a logic of vertical connection between levels of planning, which, in our understanding, is divided into three procedural levels of operation, i.e. planning and management: (i) That of the definition of the vision and objectives, from the more general to the more specific; (ii) That of the definition of models, methodologies and mechanisms dealing with action and material implementation, from the management model to the strategic level to mechanisms and criteria for urban implementation; (iii) Finally the assessment procedure, to diagnose the state of the situation and recommend the revision and reformulation of the plan, management and action.

Figure 7 – Exemplification of the integrated assessment, structure of economical sustainability indicators and its rational descriptors

	ATTRIBUTES		VARIABLES						INDICATORS OF ECONOMICAL SUSTAINABILITY - descriptor rational	Desired Trend	MANAGEMENT INSTRUMENTS
			A	B	C	D	E	F			
SOCIAL DIMENSION	Accommodation	1	X	X					Average cost of maintenance / management of the urban environment per unit of land use	↘	b) Housing Local Plan
	Education	2	X	X					Collective costs for the conservation / management of schools at: EB1; etc.; Special; etc.	↘	b) Education Charter
	Health	3	X	X					Collective costs for the conservation / management of equipments of health: municipal; regional	↘	b) Health Charter
	Culture	4	X	X					Collective costs for the conservation / management of cultural service spaces level: local; municipal	↘	b) Cultural Charter
	Leisure	5	X	X	X				Collective costs for the conservation / management of leisure facilities	↘	b) Social Spaces Charter
	Social Support	6	X	X	X				Collective costs for the conservation / management of spaces of social support	↘	b) Social-support Charter
ECONOMIC DIMENSION	Work	7	X	X	X	X			Collective costs for the conservation / management of collective space inherent business activities	↘	c) Besness Spaces Charter
	Trade & Services	8	X	X					Ratio popul./establishments: Local trade; shopping centers; public administration; banks; etc.	↗	d) Besness Spaces Charter
	Mobility	9		X	X	X	X		Ratio of various modes of transport/resident population	↗	e) Urban Mobility Plan
ECOLOG DIMENS	Ecolog. Regulat.	10	X						Collective costs in victims environmental risks	↘	b) Munic. Emergency Plan
	Basic Support	11		X	X	X	X		Collective costs for conservation / management of infrastructure networks on high	↘	b) Munic. Infrastruct. Plan

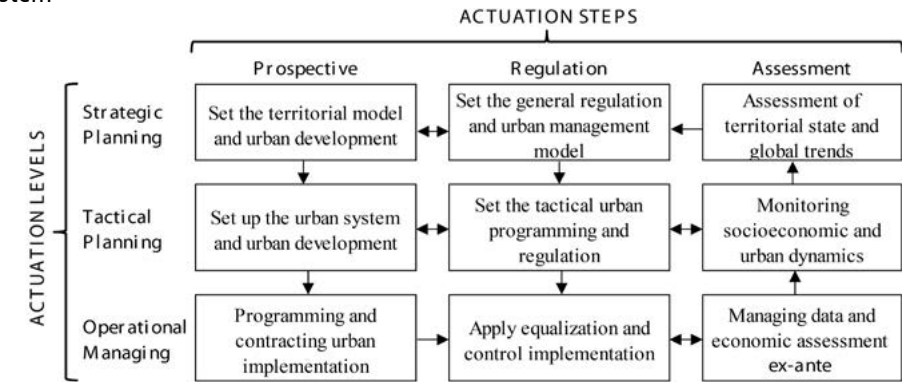
Source: Grave & Vale 2014

How to ensure the efficiency and effectiveness of the management of complex urban systems

The TM system is hierarchical, organising itself through coordinated interaction at national, regional and municipal levels. This institutional structure implies coordination between the various territorial levels and the respective instruments, at the level of sectors and intervening bodies. The organisation of the SM is pyramidal, applicable at the institutional and spatial scale, with this also being the case with regard to the competences and functions of management, from the strategic level (assessment of the context, balancing of the scenarios, vision options) to the operative implementation (contracting and carrying out short-term implementation), to the interim level (formal consideration of the physical systems, legal regulation, programming its implementation, systematic monitoring). In addition, at each level of action mentioned, there are different areas of operation, from establishing objectives (global strategic vision, local or sectoral strategies, specific objectives) to pertinent actions for assessment procedures, to procedures for defining methodologies and solutions for implementation (regulation, programming and project) (Grave, 2013). The first aspect, essential for the TM system which we are carrying out, concerns its functions, that is, that which it serves in general, as a whole, and that which it serves in each of the nuclear elements. To respond to the stated theoretical foundations, and in accordance with that described above, we will now define the Core Functions of the integrated

system for strategic territorial management (ISSTM), through the matrix of Core Functions of the territorial management system (Fig. 8).

Figure 8 – Matrix of the core functions of the integrated strategic land management system



Source: Drawn up by the author

Carrying out the TM functions is undertaken by system elements, the status and form of which are adapted to each management level and area: (i) the instruments (mechanisms and processes); (ii) the agents (public, central and local administration, socio-economic agents, local community and urban implementation promoters); (iii) important resources in the TM (human resources, information, facilitating tools). Finally, to briefly describe the system, its inter-relationships should be mentioned, that is, the connections and dynamic interdependencies between the nodes or functional cores of the system (Fig. 8): (i) core inter-relationships at the level of operation; (ii) core inter-relationships at the area of operation; (iii) interdependencies regarding the external surroundings. Through this structure we can construct the consultation and action guide adapted to the environment of the TM for each actor and each strategic reference framework to be observed in each context. Furthermore, with this structure shaped as such and utilising an assessment methodology using balanced-scorecard indicators, mentioned in point 4.6, performance assessment can be carried out both for efficacy, through verifying the state of the territory, and the efficiency of the SIGTE, through verifying the application index of the management instrumental framework and the level of implementation of the programmed goals.

How to ensure adaptive territorial management

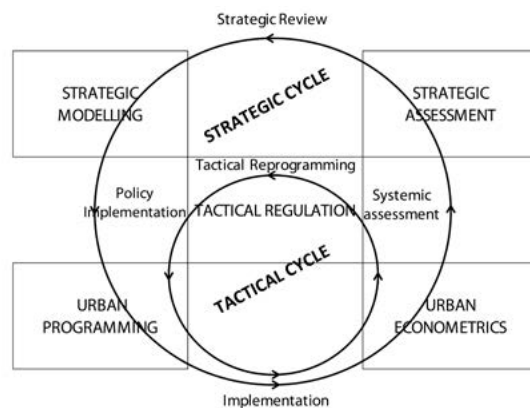
According to Carvalho & Gonçalves (2014), since positivist planning does not include uncertainty or risk, it provides a limited vision of the future in not considering speculative yet possible scenarios, making it inappropriate and structurally incapable of considering the future. Indeed, outlining the future territorial model is not enough, even if it provides the necessary implementation and funding programming, because throughout the development process

externalities occur driven by events or tendencies stemming from the surroundings which in some way influence the supply and demand market for urban products, whether these be real estate or individual or collective services. There was therefore a need to ensure that the planning includes consideration of uncertain but possible scenarios as well as establishing routines which ensure predetermined ongoing assessment and regulation.

Which procedures and mechanisms should be adopted so that they form preventive assessment and self-regulation factors (determining the revision) of the planning and management system? To respond to these issues it is necessary to: (i) go beyond the positivist approach, that is, so that adaptive TM reaches the goal of sustainable urban planning with the resilient city having to attach *future studies* to the usual urban studies, i.e. speculate on possible scenarios so as to be able to assess future impacts and determine the measures or precautions to be taken depending on the desirability or undesirability of these; (ii) introduce automatic implementation mechanisms for assessment-regulation procedures in a systematic manner rather than timely or facultative, according to levels of scope and depth as well as differentiated temporal rhythms.

Thus, to ensure adaptive TM the following is proposed: (i) Undertake, as proposed by Carvalho and Gonçalves (2014), the exercise of construction scenarios which outline narratives forecasting what may happen, what we wish to happen, what should not happen and what we do not want to happen, enabling us to anticipate or approximate dynamic paths or trend trajectories which these may lead to. This will enable the better assessment both of measures oriented towards the desired strategic objectives and maintain monitoring on what may constitute a potential risk; (ii) Establish mechanisms within the integrated TM system which, as a rule, implement two planning cycles - the strategic cycle: implementation > strategic-assessment > review of strategic modelling > implementation of new policies > implementation programming, according to a more extended time period (e.g. political mandates) – the tactical cycle: implementation > systematic-assessment > tactical reprogramming of policies to be implemented > readjustment of the programming or even the urban implementation (Fig. 9).

Figure 9 – Planning cycles within the adaptive territorial management system



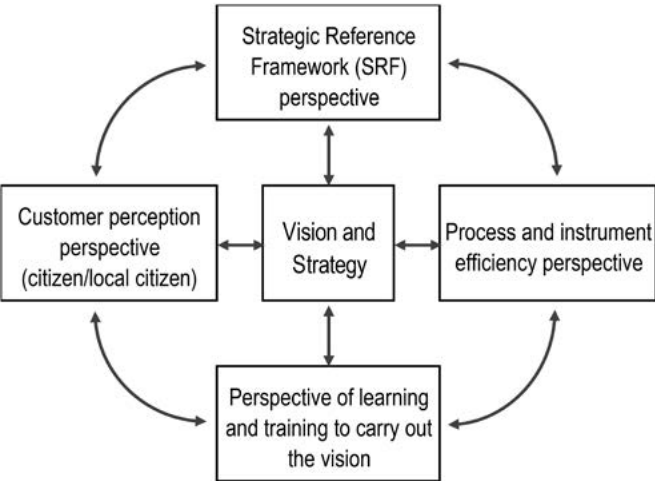
Source: Drawn up by the author

Assess the performance of the territorial management system

To respond to the functional multiplicity of the territory, the TM system has caused a proliferation in the sectoral policies falling under the remit of other administrative authorities. Alongside this, the agents and forms of entrepreneurial partnership for urban development have multiplied. In the meanwhile, the science of complex and self-organizational systems emerged which self regulates and evolves through incremental changes. Outdated deterministic planning has now been succeeded by open system management, capable of exchanging energy with its environment, but organisationally closed to be able to find its internal coherence (Queirós, 2009). In a complex system, the verification of results, if observed in a partial or segmented manner, does not confirm either its systemic coherence or its related re-adaptation to the evolution of the context and, therefore, neither with the principles of sustainability and resilience. With SM it is necessary to reconcile interests and establish options depending on the pre-assessment of the context and tendencies. For Queirós (2009), spatial planning is no longer limited to the institution and to the technical team. In fact, concerns are accentuated with the coverage and effectiveness of sectoral integration and its strategic dimension, involving numerous options and institutions which have become systems made up of networks of actors, both internal (planning process managers) and external (stakeholders...) who, together, direct the evolution of the planning processes. The design of spatial planning has become collaborative, shared, often turbulently (Healey, 1997), and dynamic as the parts interact to configure the *space of the networks*. The integrated planning of the territory therefore consists of a network where all points interconnect, with different intensities, adopting the complex behaviour resulting from the level of interdependence. Becoming more familiar with the problem of the complexity of the processes of territorial management, it becomes easier to find the path to achieve a better and more sustainable spatial management (Queirós, 2009). However, once the sectoral policies and the strategic development vision have been defined, this will have to be implemented and materialised. Policies focused on environmental or economic sustainability seeking harmonious development and social satisfaction will serve for nothing if that vision does not indeed mark the state of the territory and the socio-economic dynamics. Despite the efforts made in designing SM strategies, evidence of deficient planning persists. This proves that strategic planning, in SM, has remained a closed system and territorial management has not included the assessment of its own performance and the learning of new options and practices based on a systematised balance between the defined objectives and the results obtained. We have noted a failure of theory over the obvious need for integration between strategic planning and operative implementation management within SM. According to theories of integrated management applied to companies, strategic management should be assumed as an integral approach capable of aligning two fundamental processes: operational efficiency and competitive strategy. To this end, it is necessary to revise the current processes carried out by different agents within the system. In this context, the balanced-scorecard is a valuable tool, since it enables the monitoring of organizational performance within a perspective of interdependence with the strategy and promotes feedback for strategic planning (Kaplan, R. & Norton, D., 2010). The TM is carried out by a wide set of agents/actors, with differentiated tasks and objectives according to the different management levels and areas, each one with their interests and individual or sectoral strategies, and all this should be brought together, in an effective synergy, around a

single and coherent strategic vision (Fig. 10). Therefore, it is essential that all actors have a full perception of the overall TM system, and harmonise their knowledge, information and trained competences in the respective area of activity. In order to do that, it is necessary to have instruments facilitating management endowed with systemic assessment based on balanced indicators.

Figure 10 – Structure of balanced indicators for performance assessment



Source: adapted from Kaplan, R., Norton, D. (1996)

For the aforementioned systematic assessment, a system of indicators must be developed to measure the level of efficiency in each of the segments or functional cores of the SIGTEA, that is, for each one of the levels of activity (strategic, interim and operational) and for each of the areas of activity (prospective, regulation, assessment) and, therefore, delineate the profile of efficiency-performance for each agent (e.g. municipalities). Finally, with the composite indicators that define this profile it is possible to establish an integrated index that quantifies the level-of-performance that each TM agent shows within the SM framework. For example, considering the structural model of performance indicators (Fig. 10), it is possible to carry out performance verification from the perspective of the efficiency of the processes and instruments, i.e. in drawing up and applying the TMI inherent to the instrumental structure according to the proposed SIGTEA model (Fig. 8), thus reflecting the profile of the instrumental efficiency-performance.

Conclusion

The conclusions are set out according to the question raised at the start of this article, that is, how to achieve sustainable TM of the urban system, i.e., of the resilient urban development, capable of preventing or adapting excessive urbanisation dynamics which result in persistent situations of dysfunctionality and environmental deterioration; stagnation and urban diseconomy. These are organised into two parts, concurrently point by point, first the summary of the state

of the territory reflected in the results of the case study presented and then the statement of the potential benefits which the proposed innovations may bring if they were applied.

The impact of rapid urbanization and abrupt stagnation on the state of the SM: The following context was found: (i) The TM authorities, in classifying urban land and establishing its category of use, were not aware of this creating potential value (gains) which stimulated dynamics in the land market and in urban developments; (ii) Those dynamics took on an accelerated rhythm to the extent that the real estate supply market greatly exceeded demand; (iii) The municipal investment programme in infrastructure and collective amenities was oriented in terms of maximising demographic expectations influenced by the rhythm of growth in the housing stock; (iv) The investment initiative, the funding systems, the means of production and employment were attracted locally by the expectation of extremely high and rapid profits, with the general economy becoming too concentrated and dependent on the building industry and the real estate markets related to the new urbanisation; (v) The sudden indefinite and generalised stagnation of growth led to a scenario in which an immense number of infrastructures were ready to enter into service but without users/paying individuals, others unfinished and rapidly deteriorating, wasting energy in useless street lighting, and mistakes in the allocation of collective amenities; persistent debt and bad debt; proliferation of toxic financial assets, losses and bankruptcies in the means of production, high rate of unemployment; (vi) In the areas of accelerated urban growth, which lasted around a decade and a half, a somewhat faceless environment was created, not to say that of an actual abandoned works site, thus prejudicing urban living conditions.

Potential benefits of the innovations presented for a better and more resilient TM: (i) Carrying out a strategic-preventive TM, with medium to long-term urban foresight, where excessive, i.e. expansionist, optimism regarding growth and municipal development would be detected, and the TM agents could have established a more considered delimitation of the urban perimeters; (ii) Balanced-scorecard assessment cyclically analysing market dynamics, through urban econometrics, which would have enabled the first signs of slowing down to have been detected, and the (lack of) harmony between supply and demand and the taking of tactical regulative measures concerning urban programming and implementation; (iii) Systematic monitoring and assessment would have enabled the tactical regulation of the programming of the capacities of general infrastructures and collective amenities; (iv) Through a balanced-scorecard based TM system, investors and promoters and funding agencies would have been informed and could have made more considered choices in new development initiatives and wider investments in the real estate market; (v) Better preventive assessment of the size of urban perimeters and more timely regulatory action concerning growth would have enabled expansion to have been curbed and focus given to the existing urbanised space; (vi) Furthermore, during times of expansive urbanisation dynamics, the TM authorities could have triggered the procedures to revise the MMP, so as to reshape or reverse the course of events.

Final Note: The TM agents should integrate the subjects of economics and management in their planning action and schools of Economics and Management should increase their training activity in specific competences for Economics and Territorial and Urban Management.

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CHAPTER 3

(Re)Organisation of Public Service Networks in Portugal from the Perspective of Territorial Resilience and Cohesion

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Introduction

This chapter aims to relate the reorganization of public services networks and innovation in their performance, questioning whether territories have become more resilient and cohesive or, on the contrary, more vulnerable.

To respond to territorial disturbances caused by globalisation (uncertainty, co-evolution, interdependence, rupture and marginality), new concepts have been adopted, particularly those of resilience and territorial cohesion. The former refers to the capacity of territories to adapt and resist to external shocks, without collapsing, and constructing sustainable and creative solutions; the latter, based on the cohesion policy of the European Union (EU), seeks to profit from territorial diversity, through concentration, cooperation and connection, so as to attenuate development divergences at different levels within the EU.

Amongst the alterations, what stands out is the decrease in the weight of the State and intrinsic consequences in the reorganisation of public service networks. Thus, from the 1980s onwards, in most European Union countries, and a little later in Portugal, there was both the restructuring of public service networks with face-to-face assistance (as seen in mergers, re-conversions or even closures of units), and their growing use/provision of information and communication technologies (ICT). These changes, started as a result of the adoption of neoliberal policies, the assimilation of new public management models with growing ICT resource, and the diversifications of target-public needs and demographic alterations, were amplified by the economic and financial crisis, obliging the State to adopt a more rational management of its resources.

The chapter is organised around three topics: it starts with a theoretical discussion on the evolution of public services supply paradigms, linking this to concepts of territorial resilience and cohesion; this is followed by a brief description of public services in Portugal, focused on those related to education, health, justice (courts) and administrative matters (i.e., finance service, social security and registries and public notaries); finally, based on a survey of resident populations about the use of those services, three regional case studies are analysed, providing examples of territories with different dynamics: densely urbanised metropolitan territory (six municipalities of the Lisbon Metropolitan Area), a rural-urban axis (six municipalities within the Évora-Beja axis) and a low-density rural area (the four border municipalities of the Baixo Alentejo).