Indicators for Monitoring Municipal Plans of Spatial Planning

Dissertation for the Masters Degree in Territorial Engineering

Extended Summary

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Abstract

Spatial Planning is the science which regulates the interactions between Man and Territory, using planning and the instruments of territorial management to achieve that relationship. The plans at the municipal level are of particular importance in that system of planning because it is through them that land can be classified and qualified – thus forming the fundamental tools of the present policy of spatial planning and urbanism.

Subsequently the privilege of the decisional level closest to the citizen, together with public participation, reinforces the citizens’ access to planning procedures, which are all fundamental principles of that policy.

Considering that monitoring is essential in creating planning procedures that are more effective, dynamic and sustainable, the use of indicators in (participative) monitoring in the execution of municipal plans of spatial planning is studied in this work.

The study consisted of a framing of the Portuguese system of spatial and land use planning in an analysis of a number of monitoring and participation methodologies, and the study of several existing reports on the state of territorial planning.

Following that a proposal of indicators of execution monitoring was created and applied to the case study of the current Municipal Master Plan of the municipality of Ourém, previously approved by a process of public participation by the local stakeholders.

Key words:
- Municipal Planning, Public Participation, Execution Monitoring, Indicators
1 Introduction

The legislative changes occurring in Portugal in the last decade of the previous century, through the creation of the Law for the Policy of Spatial Planning and Urbanism\(^1\) and of the Juridical Regime for the Instruments of Territorial Management, introduced the obligation of evaluating the plans in the land use planning procedure, also creating the instrument of State Reports of Spatial Planning, to be produced every two years by the entities of public administration.

These legal demands along with the increasing concerns of the impact of human actions on the territory, justify that ever more effective evaluation and monitoring methodologies are put in place. The purpose is the creation of a plan as a decision making process, enhanced by models of citizen participation where the values and opinions of the local agents are considered and integrated in the dynamic of the plans themselves.

Considering that currently a large number of the Municipal Master Plans are under revision, which, according to the same juridical regime, must be preceded by an evaluation of the execution of the current plan, it is necessary that the referred methodologies include the optimum indicators of execution, weighted according to the strategy in place for the territory and the contributions of the main local agents, constantly searching for greater sustainability in their use.

This work is framed in the respective scientific area, from Spatial to Land Use Planning (with the main focus on the municipal level), to evaluation, monitoring, and public participation.

The study of monitoring indicators is then performed, and their theoretical context and their application in the State Reports of Spatial Planning analysed. The questionnaire which was undertaken with a number of municipal technicians is analysed, and the proposal of execution monitoring indicators is described by fields of analysis.

Finally, some of the execution indicators considered more relevant are applied to the case study, according to the strategic concept of the Municipal Master Plan of Ourém and the results of the process of public participation.

2 Framing of the study

2.1 Spatial and Land Use Planning

The concept of Spatial Planning is not unique; various definitions exist depending on which source is consulted. Despite such diversity, the notion defended by the European Spatial Planning Charter is the more consensual one: spatial planning is referred to as “the spatial expression of economic, social, cultural and ecological whole society. It is also a scientific discipline, an administrative technique and interdisciplinary policy and seeking an overall balanced development of different regions and the physical organization of space according to a guiding concept” (DGOTDU, 1998:19).

The achievement of the orientations defined at the level of spatial planning is done by recourse to planning which is considered a systematic, multidisciplinary process, which seeks to establish the

\(^1\) Lei de Bases da Política de Ordenamento do Território e Urbanismo (LBPOTU).
means to attain certain goals: “Planning in its more restricted and traditional view is a way to achieve the objectives of spatial planning and sustainable development, by a set of activities which detail those objectives in space and type, generate, evaluate, and select the various possible activities to attain them, define the means necessary and the programming of their use and exert control and management of the execution of the defined actions” (Correia, 2001:25).

In Portugal the entire system of spatial and land use planning is based on recourse to instruments of territorial management and typified plans which regulate territory on the various levels according to the principle of hierarchy, in which the orientations of a global level should be translated into the local planning.

The municipal level is the one which establishes the use of land with the greatest precision through the Municipal Spatial Plans: Municipal Master Plan, Urbanisation Plan and Detail Plan.

As such, the execution monitoring of this kind of plan is considered relevant to understand the degree of implementation and in particular the levels of use of urban spaces, avoiding the unnecessary extension of urban perimeters and contributing to mitigating dispersed construction.

2.2 Evaluation, monitoring, and public participation

The procedure of evaluation of the plans was incorporated into the juridical regime in 1999, materialising in the opinion of some authors defending the necessity for the establishment of a land use plan as an integrated system. The evaluative concept was then framed within the “new” concept of planning, in close affinity with the dynamic of plans, their creation, alteration and revision.

The need for constructing a dynamic and cyclic land use planning process, based on a methodology of evaluation and monitoring, is also stressed by Portugal (2002), as a way of constituting an active mechanism of territorial structuring.

The use of the terms “evaluation” and “monitoring” raises some doubts; indeed they are not simple concepts. Some authors hold that they are autonomous and distinguishable processes, while others defend that in reality monitoring is a typology of evaluation, done in a systematic and permanent fashion while the plan is in place. The so called “ongoing” evaluation (Batista e Silva, 2002), as is upheld in this article.

Both monitoring and public participation are considered to be pluses in planning for a methods of guiding and legitimising the decisions made, with the goal of sustainable territories resting on governance models.

Batista e Silva (2003) understands that the involvement of populations in planning is crucial so that it sees itself in it, and thus accepts it. Portugal (2002) states that it is fundamental that there is communication between planners and population for the establishment of the process-plan where monitoring is included as a facilitating mechanism for communication, and promotes adherence.
3 Study and selection of execution monitoring indicators

3.1 Context

Whichever evaluative analysis or type of approach used in the monitoring of a plan or project, it is necessary to resort to information. Usually indicators are referred to since various grids of indicators proliferate on the various thematic sectors, which have been growing with the problem of sustainability and the need for measurement which has been driven by it (Batista e Silva et al, 2009).

Indeed from among their various functions, indicators assume importance in the monitoring/evaluation of phenomena, in the communication of results and in the sharing of information with the scientific community, policymakers, and the public at large. Execution monitoring also requires the use of information, in which attributes and indicators can be identified, a few qualitative, others quantitative, some measurable, map able or not (US Forest Service, 2010).

Indicators can be considered to be “parameters selected and considered isolated, or combined among themselves, with special relevance to reflect certain conditions of the systems in analysis”. This orientation leads to understanding an indicator as the rational construction of several variables, or parameters, which according to the same source “correspond to something which may be measured with precision or evaluated qualitatively/quantitatively, and which is considered relevant for the evaluation of the environmental, economic, social and institutional systems” (DGA, 2000:10).

3.2 Useful presuppositions in the use of indicators

The choice and definition of monitoring indicators must derive from the strategic definition in place, that is to say, the identification of the objectives pursued by the plan in analysis, and the points of view of the local agents, which reflect the criteria relevant for the decision.

This identification of objectives and points of view is similar to the considerations relevant to the multi-criteria evaluation processes, meeting the structuring of multi-criteria analysis defended by Bana e Costa (1992), where it defines the exercise as the problematic structuring of objectives or points of view.

Also the environmental evaluation studies, with the selection of the Critical Decision Factors, constitute a similar theoretical exercise, where the impacts of planning options are made clear in the face of the aspects relevant for the decision.

According to the work carried out, the indicators to be used should be simple to understand and represent the reality being studied, resulting from an objective and justified weighting, relying on the availability of base data, the possibility of inter-calibration, the comparison between criteria, the ease and speed of determination and interpretation, reflecting the degree of importance, the scientific validation, the sensitivity of the target-audience, the cost of implementation and the possibility of being rapidly updated (DGA, 2000). Partidário (2000) includes in those characteristics objectivity, relevance and significance, while other authors add simplicity, validity, regularity, measurability, sensitivity and confidence.
3.3 Analysis of some State Reports of Spatial Planning

The analysis of this type of reports was used as a way of benchmarking, seeking to identify the execution monitoring indicators used, as well as the sectors where they were inserted.

While the legal obligation of producing this type of work, whether at levels of central or regional and local administrations exists, it was verified that the currently few authorities compile reports. In this sense Gonçalves (2008) states that the evaluation of the national policy of spatial and land use planning has been nearly non-existent.

The following State Reports of Spatial Planning were analysed:

<table>
<thead>
<tr>
<th>Designation</th>
<th>Territorial scope / Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Report of the Spatial Planning of the Açores</td>
<td>Regional / 2003</td>
</tr>
<tr>
<td>Grounding Report for the Revision of the Municipal Master Plan of Loulé</td>
<td>Municipal / 2005</td>
</tr>
</tbody>
</table>

From this analysis 579 distinct indicators were identified divided into different sectors. From among that set the indicators thought to be more useful in the execution monitoring of Municipal Spatial Plans were identified, a total of 113 indicators which sustained the proposal for indicators are described below.

Apart from the identification of indicators, the analysis conducted allowed the outlining a number of interesting conclusions. In this sense it is thought that the works analysed are good examples of spatial and land use planning monitoring, while a lack of standardisation of the reports, great diversity in their sectorial structuring and in the selection of indicators, sources, and reference dates is noted.

Although being works subjected to public consultation, no references to any process of participation in their production which might have helped in the selection of key sectors and indicators, were found. According to the existing best practices, it is thought that future challenges in the conception of these documents should include the integration of instances of public participation in the different phases of the production of the reports, which would allow the enrichment of the entire process and establish which are the preoccupations and focuses relevant to the stakeholders.

3.4 Proposal of execution monitoring indicators for Municipal Spatial Plans

One of the main objectives of this work was the creation of a proposal of execution monitoring indicators, made from the analysis conducted of the State Reports of Spatial Planning, enriched by bibliographical study and a questionnaire submitted to several municipal technicians experienced in land use planning and management.
The questionnaire was conducted by email and comprised seven questions, three of which intended to understand which environmental sectors execution monitoring should focus on, as well as the criteria of the selection of indicators to be used. The remaining questions pertained to the procedures of public participation.

In the responses to the questionnaire, the respondents suggested that the selection of execution indicators of Municipal Plans should be considered on a case by case basis, and shouldn't ignore in particular the levels of accomplishment of the urban areas, estimating those areas, as well as the compromised and free ones, so as to understand the eventual need of expansion of the urban perimeters.

As a result, 68 indicators were proposed, grouped into eight different sectors. The aggregation of sectors was also based on the United Nations System of Indicators of Sustainable Development (APA, 2010).

The execution monitoring indicators designed were predominantly physical indicators, more related to the land use models of the plans than with the strategic models, which in themselves are more variable and thus more difficult to generalise as is intended with this proposal.

In the table below the chosen sectors which were studied, as well as the respective number of proposed indicators, are presented:

<table>
<thead>
<tr>
<th>Sectors of study</th>
<th>Nº. of indicators proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economy</td>
<td>14</td>
</tr>
<tr>
<td>Institutional Sector</td>
<td>5</td>
</tr>
<tr>
<td>Social and Habitational Dynamic</td>
<td>13</td>
</tr>
<tr>
<td>Environment</td>
<td>10</td>
</tr>
<tr>
<td>Population</td>
<td>6</td>
</tr>
<tr>
<td>Mobility</td>
<td>7</td>
</tr>
<tr>
<td>Land use Planning and Management</td>
<td>9</td>
</tr>
<tr>
<td>Infrastructures and Equipments</td>
<td>4</td>
</tr>
</tbody>
</table>

4 Application to the case study

The theoretical considerations investigated in this work as well as the selected indicators were the target of an application to a case study. That application was made to the Municipal Master Plan of the county of Ourém, a plan which is in revision and is understood to be the priority planning procedure for the municipality.

4.1 Framing of the case study and reasons for its selection

The county of Ourém is around 416.6 Km², situated in the district of Santarém and integrated in the regional statistical unit designated by “Centro”, in the Médio Tejo sub-region, approximately 200 Km from the city of Porto and 120 Km away from the city of Lisbon.
In terms of major accesses, it is served by the No. 1 Highway and by the Railway Line of the North, which are the two main routes of connection between the two largest cities in the country, Lisbon and Porto. It borders on the north, the municipalities of Leiria, Pombal and Alvaiazere, on the east, Tomar and Ferreira do Zêzere, on the south Torres Novas and Alcanena and on the west, the municipality of Batalha.

In the municipal urban system the cities of Ourém and Fátima stand out; however, the municipality presents a great heterogeneity in its 18 parishes.

Several reasons led to the selection of this Master Plan for the application of the constructed indicators: i) it was one of the last municipalities in Portugal to have an effective plan of this type; ii) it is a legal requirement that the plan’s execution is evaluated as it is in revision; iii) there is no State Report for Spatial Planning for the county and iv) from the beginning, the City Hall were receptive to collaborate with this work.

4.2 Works conducted in the scope of public participation

As stated earlier, the selection of monitoring indicators should derive from the definition of the strategy in place in the territory in question, as well as from the points of view and opinions of the local agents. Therefore an analysis was made of the plan in question which identified its strategic vectors and objectives to allow for monitoring. It was then necessary to understand the stakeholders’ motivations and which criteria they understood should guide the execution monitoring process.

With this in mind a process of public participation relying on several communication channels was created: a website was created and hosted at www.participaourem.net; groups were created on both Facebook and Twitter social networks, a poster was designed for the “Congresso de Ourém – A look over the Future” conference, held in March 2010, some pamphlets were created and we participated in a radio programme.

The process of consulting the stakeholders was also broadened to 13 of the 18 Parish Centres\(^2\) of the County of Ourém, in meetings held for this purpose. These meetings lasted on average two hours each and around 50 persons in total participated, particularly representatives of the Parish Centre Administrations.

\(^2\) An administrative figure existing in Portugal, the parish level equivalent of City Halls.
4.3 Selection and application of the indicators

The work conducted in public participation together with the analysis of the objectives of the plan enabled the filtering of the initial proposed monitoring indicators. From the 68 defined indicators, 29 were selected as more relevant for the territory being analysed.

As severe time constraints and dissertation length restrictions existed, the monitoring of the execution of the Municipal Master Plan of Ourém was performed succinctly, resorting to 13 indicators which were most referred to in public participation, out of the 29 defined.

The application of those indicators was fundamental as it allowed the demonstration of the way the proposed list can be made adequate for a specific territory/plan, their methodologies and calculation formulas also being presented, some of which constitute an innovation in this dissertation: for example the calculation of accomplished urban areas.

4.4 Results

The application of the 13 indicators allowed us to draw a number of preliminary conclusions which should be expanded in the studies to be developed in the scope of the revision of the Plan. It was thus concluded that:

1. There is strong discontentment with the current Municipal Master Plan of Ourém, around 3000 suggestions being registered for its revision with most of them implying the reclassification of rural land into urban;

2. The objective of increasing the population wasn’t achieved, as the county’s population decreased 0,7%, albeit less than the average of the region;

3. The amount of housing in the municipality grew by 10,9%;

4. As was the objective of the plan there was a reinforcement of the role of the two cities as the ratio of the population residing there and in the remaining territory grew by 4% between 2001 and 2011. On the contrary, a significant loss of population was observed in the rural parishes;

5. Regarding the ratio between the number of homes in the cities and in the entire municipality, there was also an increase in the polarising effect of cities by about 3%. That increase was due to the
urban phenomenon of Fátima, as between 2001 and 2011 the ratio between the number of houses in the city of Ourém and in the rest of the municipality was almost unchanged;

6. The execution rate of the urban areas of level two, including the future urban areas (not accounting for the committed spaces) is only 44%;

7. From all Planning and Management Operative Units defined only 11.1% led to approved plans;

8. About 3.2% of the county’s area is encompassed by a plan of lower hierarchy than that of the Municipal Master Plan, a Urbanisation Plan and six Detail Plans being in force;

9. A low rate of accomplishment of the industrial areas is verified;

10. The percentage of population served by the sewer network increased by 14%, while still being far from the objectives of that sector’s policy;

11. About half the social facilities foreseen in the plan’s territorial model were materialised;

12. According to the calculation model used only 5% of the analysed future urban areas are served by both a sewerage network and a water supply network;

13. The land structure is un-phased from the minimum areas of parcels imposed by the regional plan, only 0.2% of the parcels existing in the studied sample are 4 ha or larger.

5 Conclusions

It was understood throughout this work that the evaluation/monitoring of the state of spatial planning and specially of the execution of plans, are fundamental to the application of sustained territorial policies as ways of strengthening planning as a process, cyclic and weighted.

That monitoring should not forget the strategic systems in place, nor neglect the active participation of citizens and organisations, with the intent of supporting the selection of indicators, legitimising the planning options adopted and the responsibility of the authorities concerned.

Accordingly this work can be considered to be a scientific contribution in the support and defence of the need of monitoring planning through the use of coherent and adequate monitoring indicators, which can be constructed based on the knowledge developed within this report.

This study allowed succinct analysis of the execution of the Ourém Municipal Master Plan, while its options were never put in question – it attempted to simply assess in preliminary manner of its execution and in particular the accomplishment of urban spaces was of great importance.

It is thought that in the future the monitoring of spatial and land use planning should consider the production of State Reports of Spatial Planning on national, regional, and local levels. Those reports should be produced with uniform technical and methodological criteria, to ensure a global monitoring of existing realities and identify asymmetries, to allow for the reinforcement of quality in the decisional process.
Also the revision of the Municipal Master Plan of Ourém faces several challenges which will need to be duly considered, to strengthen the future proposal for the plan towards the sustainable use of the territory. For the success of that proposal it will be necessary that a monitoring model is developed that allows a conception of the future plan and considers the real system, makes the correct decisions, altering, inflecting, or maintaining the initial strategies.

6 References


Batista e Silva, Jorge; Landeiro, Clara; Gonçalves, Jorge; Soares, Rita; Cambra, Paulo. (2009) Participação Pública e Monitorização de Planos e Projectos. In “Métodos e Técnicas para o Desenvolvimento Urbano Sustentável – A experiência dos projectos Polis”. Lisbon, ParqueExpo, pp. 139-172.


Partidário, Maria do Rosário; Jesus, Júlio. (2003), Fundamentos de Avaliação de Impacte Ambiental. Lisbon, Universidade Aberta.
