World Academy of Science, Engineering and Technology
International Journal of Civil and Environmental Engineering
Vol:3, No:5, 2009

# Public Participation in Sustainable Urban Planning

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Open Science Index, Civil and Environmental Engineering Vol:3, No:5, 2009 publications.waset.org/15443/pdf

***Abstract*—**Urban planning, in particular on protected landscape areas, demands an increasing role of public participation within the frame of the efficiency of sustainable planning process. The development of urban planning actions in Protected Landscape areas, as Sintra-Cascais Natural Park, should perform a methodological process that is structured over distinct sequential stages, providing the development of a continuous, interactive, integrated and participative planning. From the start of *Malveira da Serra and Janes Plan* process, several public participation actions were promoted, in order to involve the local agents, stakeholders and the population in the decision of specific local key issues and define the appropriate priorities within the goals and strategies previously settled. As a result, public participation encouraged an innovative process that guarantees the efficiency of sustainable urban planning and promotes a sustainable new way of living in community.

***Keywords*—**Protected landscape areas, Public participation, Sustainable development, Sustainable planning, Urban planning.

## I. Introduction

THE development of the city as support of human activities has resulted in a complex live laboratory in permanent evolution. The same city which according to Lewis Mumford "…is also a conscious work of art, and it holds within its communal framework many simpler and more personal forms of art." [1].

The continuous growth process of cities, with its uninterrupted demands of natural resources consumption, is related to serious environmental and social problems. By the end of the 20th century, this growing process reached warning signs, regarding the effects resulting from uncontrolled urban expansion without concern of appropriate infrastructure and facilities location.

This alert also emerged as a result of the globalization of urban planning process, in which interventions at different levels [2], supported by public and private partnerships, were increasingly neglecting local and environmental specificities, as well as overlooking the population needs and its cultural identity.

In a time when near half of the world's population already inhabit in cities, UN-Habitat Istanbul+5 Conference (2001) observed that the cities globalization process was still escalating – since Habitat II in 1996 in Istanbul –, leading to ever-increasing problems in the world's biggest cities [3].

We are therefore facing the evidence of the need of a new paradigm shift in cities management. Urban areas should act as adequate places to humankind essential activities take place, guaranteeing an environmental balance with rural and natural areas to which the cities relate and depend on.

Ebenezer Howard already stated in *"To-Morrow: A Peaceful Path to Real Reform"*, within the theory of the *Garden City*, the intention to give a reply to the necessity to relate city and nature [4]. The thought of "bringing" or "keeping" nature within the city has crossed all 20th century, assigned to a multitude of different perspectives and solutions around the world [5]-[6].

In Amsterdam, the *Plan Zuid* (1914-17), also known as *Plan Berlage*, project of Hendrik Petrus Berlage, included green and open spaces as the key element of the plan, acting as the structural axis of the expansion of the city southwards, as well as proposing housing programs with integration of mixed social classes. Also based on the same theoretic model, the *garden cities* Käylä (1920-25) and Tapiola (1952/1956) were founded in Finland.

*Modern Movement* urbanism, defined by CIAM (*Congrès International d'Architecture Moderne*) also presented a new conceptual urban model, with its own formal language, supported by housing units and large green spaces, delimiting zones for the *four functions*: living, working, recreation, and circulation. However, urban actions carried on the base of *Modern Movement* theories had shown not entirely suitable results, in part due to building unit's height and density, multifunctional zoning and the increase of motorized mobility [7].

Urban patterns widespread in most cities during the 20th century were also subject of review by *New Urbanism* architects and critics, who intended a reduction of built land use, higher efficiency of urban infrastructures, an effective socialization of the population, and the decrease of daily commuting journeys.

Moreover, in result of technological development and the modification of the productive process, plus the cluster of public services and facilities on urban areas, cities were focus of continuous migratory movements. As a consequence of the population increase in the cities, without a suitable planning

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support, it was registered the increase of traffic problems, the deficit of infrastructures, the suppression of green spaces and a loss of quality of life, sprouting of illnesses and social conflicts.

Face to this scenario, the development of an operative planning process is required, in order to reverse the effects of globalization that are contributing to global environmental degradation with its impact on natural resources consumption and climate change [8]. The development of this task demands a creative reply, appealing to tools from different areas of expertise and the inclusion of public participation on the decision process.

Opening the opportunity to embrace cultural and social diversity that characterizes the population of the cities today, the development of an operative planning process also implies the inclusion of ecology and public participation as active factors in the process of sustainable development [9].

This attitude would strengthen the value of the planning process itself, promoting an easier acceptance and implementation on urban development procedures. A required approach to an intercultural city should be able to provide combination of different aspects, such as:

- Ethnical, cultural, and natural diversity, as potential values of urban life.
- Socio-cultural integration policies without local loss of identity.
- Pluralism in community participation.

Public participation, supporting the population's commitment and guidance to urban planning actions, is therefore of utmost importance in the development process and transformation of the cities for the future.

Multiculturalism is essential to the sustainable city [10], as well as creativity [11], as vital features of urban societies. Culture, in its various demonstrations and styles, becomes a valuable resource to assure social cohesion and economic advantage. In the city often co-exist diverse music styles, sounds, shows and festivals which, as social features, result from the mix of cultures with creativity, contributing to local identity.

Besides its clear environmental benefits, the protection of urban ecology and biodiversity also embodies a guarantee to preserve, in the city, its singular values and the possibility to safeguard the existence of its distinguishable features that identify, value and characterize the spaces we dwell both individually and collectively [12].

This approach to a *new city* requires a different operative planning process, ruled by different kinds of specific indicators to be incorporated in the planning process by the municipalities and local administration. In this methodological frame, it's absolutely essential that the *strategy* to apply in urban areas is accepted, and decided, by the population. Only after that is possible to define and set the efficient indicators to the execution of the planning process.

Although there is not a unique way to define possible strategies and indicators, in most cases studies these can be structured over eight principles:

1 – Vision and strategy
2 – Biodiversity
3 – Economy and partnerships
4 – Society and culture
5 – Sense of belonging and local identity
6 – Empowerment
7 – Sustainable production and consumption
8 – Governance and participation

These eight principles allow a clear and objective strategy definition, from which is possible to apply the sustainable planning process [13] to different actions of urban transformation, with permanent inputs of public participation.

## II. Sustainable Urban Planning Process

The methodology proposed and used in the sustainable urban planning action consists of a process of four sequential stages, as seen in Fig. 1. These stages are developed sequentially, and dependent of each other, so that the next stage only begins after the evaluation/validation of the previous one. For this evaluation/validation it is crucial for the population to be involved in the process, giving the decision makers an accurate knowledge of the area and it's specific needs.

During all its stages – from *conception* to *implementation* – the process must have both the population and administration's participation, through constant evaluation and validation, in order to guarantee that the relation between the community and the final urban proposal, as well as it's faster implementation. It is important to mention that the population's involvement and participation, as well as of other interested parties, is a decisive factor for the success of the Sustainable Urban Planning Process [14].

Public participation accompanies the process at all stages, either by providing information or by the creation of plan monitoring commissions. However, as seen in Fig. 1, there are some formal moments of public participation during the process development, presenting participation inputs and outputs of each stage. Through these formal participation moments it is intended to assess the population's main needs and expectations, to show the work in process, and to gather information about its adaptability to the intervention priorities.

The evaluation and validation phases, combining the developed actions with public participation, should allow a better adequacy of each stage's final result to the needs and expectations of both population and administration, as it generates "feedback" that can lead to reformulations, preventing cases of inadequacy towards those expectations. This monitoring process, along all stages, helps the planners in comparing and validating the plan development with the established goals.

The effective participation of both population and local administration during the entire process is a major factor for its efficiency, since increasing the partaking of the intervening actors prevents the occurrence of potential conflicts, guaranteeing a faster acceptance of the new ideas for urban structure.

Another major factor for the efficiency of the Sustainable Urban Planning Process is the implementation stage, during which the project's execution is permanently evaluated and

monitored, and implementation technical sheets are defined with the aim to provide efficiency profits to all levels of Sustainability.

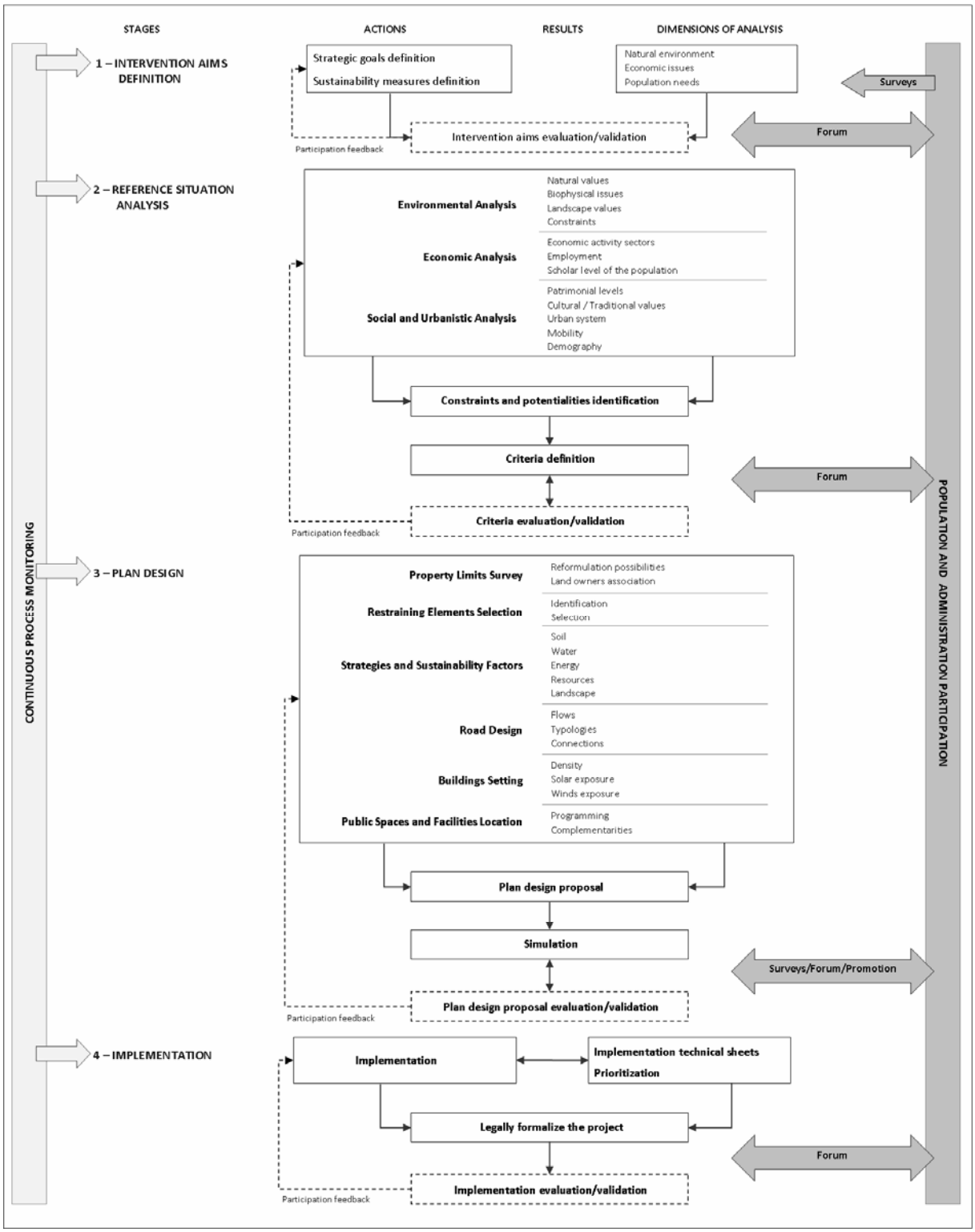



Fig. 1 Structure of urban planning process methodology

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## III. Public Participation in "Malveira da Serra And Janes" Urban Planning Process

TABLE I
MALVEIRA DA SERRA AND JANES PLAN TERMS OF REFERENCE

| | |
|---|---|
| Structured programming of urban settlement expansion and **restraint of dispersed construction** and diffuse urbanization. | 1 |
| Promotion of **building capacity in urban space, according to sustainability criteria**. | 2 |
| Promotion for the **reconstruction and restoration of existing buildings**, rather than build new ones. | 3 |
| Development of **housing programs** targeted to specific needs and areas, including the **improvement of public space** (squares, sidewalks) **and road network**. | 4 |
| Improving the quality of life, **strengthening rural local characteristics**, and **refurbishing built heritage**, particularly in the historic center. | 5 |
| Development of integrative transformation of the built environment, in order to promote **protection to ecological structure**, ecosystems renewal and the expansion of naturalized spaces through their **connection to the Natural Park**. | 6 |
| Urban design inductor of a **greater use of public space**, taking advantage of local biophysical environment. | 7 |
| Definition, quantification and location of basic infrastructure required for future development, ensuring equity in **access to infrastructure and services** of general interest in particular the **sewer systems**. | 8 |
| Plan and **location of community public facilities**, particularly regarding health, education, sports, culture and leisure facilities. | 9 |
| Promotion of mobility, accessibility and car parking properly supported answers, giving **solution to accessibility and public transport problems**, and the promotion of non-motorized transport. | 10 |
| **Inclusive design of public spaces** contributing to the "National Cities and Towns Network Mobility for All". | 11 |

Territorial management, mainly in protected landscape areas, should ensure the dialogue between the design team and local population, given the need to preserve landscape values, identity and natural resources, along with promoting conformity between stakeholders and socio-economic development. On such protected areas, the requirement of natural environment, to be managed as part of a universal public heritage, leads to an increasing role of public participation within the frame of the planning process, as the basis to land use changes and natural environment transformations, with the aim of its preservation.

Malveira da Serra and Janes constitute two formerly rural communities, clustered at the southern hill of Serra de Sintra, and located at the municipality of Cascais. The Malveira da Serra and Janes Plan covers an area of 108,8ha, 3.3% of the area of Sintra-Cascais Natural Park (P.N.S.C.) inserted in Cascais municipality. Malveira da Serra and Janes are, as well, the most populated human settlements of this area, with 1604 inhabitants, 26.5% of the population of P.N.S.C. in Cascais.

The development of urban planning actions within Protected Landscape areas, as Sintra-Cascais Natural Park, should perform a methodological process that is structured over distinct sequential stages. These stages enable the development of a continuous, interactive, integrated and participative planning process.

The defined planning process methodology allows the introduction of sustainability principles, at the same time it guarantees appropriate answers to the foremost challenges in Protected Landscape areas, where co-decision procedure is essential to a successful territorial planning.

Community participation processes result on a shared responsibility in decision making [15]. From this point of view it was thought that it would be advantageous to include the participation of the population right from the start of the planning process, thus ensuring greater dynamism throughout the design development, but also a larger and broader public awareness of the planning process.

From the start of *Malveira da Serra and Janes Plan* process, several public participation actions were promoted, and *charrettes* involving the local community, town councils (Câmara Municipal and Junta de Freguesia), NGO's and various public and private entities. The actions mentioned were carried out at Stage 1 (Intervention Aims Definition) and Stage 2 (Reference Situation Analysis; Fig. 2). These actions involved a significant number of participants, partaking the decision-making process. The latest public participation action held within *Malveira da Serra and Janes Plan* was the evaluation of intervention priorities in according to its Terms of Reference and SWOT analysis.

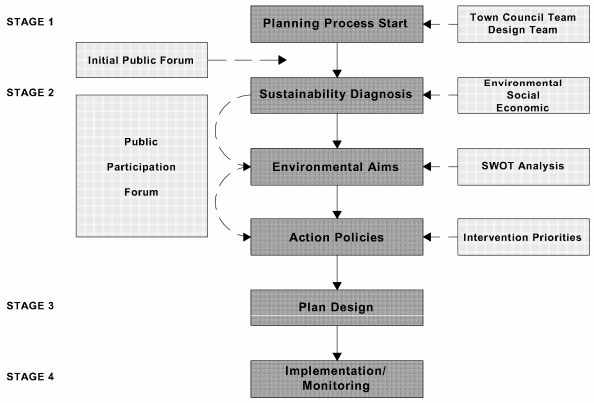



Fig. 2 Public Participation Methodological Process

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In the development of Malveira da Serra and Janes urban planning, the town council determined that the territorial management within the Sintra-Cascais Natural Park should pursue the following guidelines:

• Perception of the Natural Park as a whole, in respect of the principles of balanced and sustainable development commitments, as a key to enable a more competitive position to the municipality of Cascais;

• A growth development model, with polycentric emphasis, providing the connection between urban system, road and transportation, water, telecommunications and energy networks, information, communication and knowledge, social structure, and tourism activities, along with nature conservation, particularly in classified areas with special protection levels;

• Measures of positive discrimination in the context of rural and urban development policies, attention given to areas with low development potential, or with serious structural problems, at economic and urban levels, as well as areas with environmental conservation high pressure;

• Rational and consistent territorial supply of infrastructure networks and public facilities, supporting the structure of economic and social activities and needs.

Moreover, taking into account the legal framework of the ongoing urban planning process, the benchmarks for the Plan's proposal development and design were approved. These benchmarks already pointed out an integrative approach, specially towards: the planning of public spaces arranged in a continuous urban structure, the proposal of the community's required new facilities as well as the construction of required wastewater, communications and road networks, coherent with land use options.

These benchmarks constitute the Terms of Reference of Malveira da Serra and Janes Plan, approved by the town council with 11 strategic aims (Table I). These strategy terms are expected to ensure the surveillance of all the components of sustainable development, providing a balanced treatment between environmental, economic, social and urban planning actions.

## IV. Discussion on Public Forum Results

A public forum on the Plan's Terms of Reference has taken place, in order to involve the local community in the decision of specific local key issues and define the appropriate priorities within the goals and strategies previously settled. This public forum was attended by professionals from the town council's technical board, the design team, the official authorities and local stakeholders, alongside with local residents, providing a better understanding and clarification of local expectations and their future satisfaction through the planning development.

The aim of this event was to allow each participant to select sequential and hierarchical priority levels on the terms of reference strategic aims. The session included a slideshow presentation, explaining the methodology procedure, also supported by posters. The procedure for the selection process was to provide each participant with 3 colored tabs (1 green, 1 blue, and 1 red), corresponding to high, medium and low priority values (Fig. 3). Participants were free to independently select the strategic targets they found relevant to comment, and then fasten the appropriate colored tab next to that Term of Reference aims (Fig. 4).

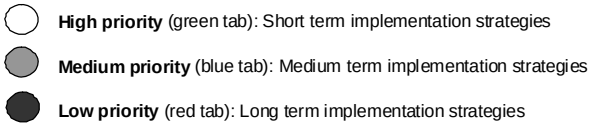



Fig. 3 Terms of Reference priority evaluation tabs



Fig. 4 Participants voting on Terms of Reference

The results of the public forum, as seen on Fig. 5, Table II, and Fig. 6, determined as high priority relevancy Terms of Reference aims 9, 3 and 8; as medium priority relevancy aims 8 and 6; and as low priority relevancy aims 1 e 7.

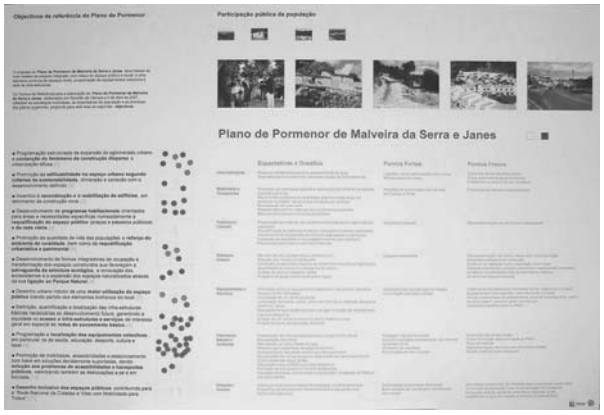



Fig. 5 Terms of Reference poster priority evaluation results

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TABLE II
TERMS OF REFERENCE PRIORITY RESULTS TOTAL ANSWERS AND PERCENTAGE

| Terms of Reference Aims | Malveira da Serra and Janes | | |
|---|---|---|---|
| Priority values | | | |
| 1 | 1 | 2 | 4 |
| 2 | 1 | 1 | 0 |
| 3 | 4 | 2 | 0 |
| 4 | 0 | 0 | 0 |
| 5 | 1 | 1 | 2 |
| 6 | 0 | 3 | 0 |
| 7 | 0 | 1 | 3 |
| 8 | 4 | 4 | 0 |
| 9 | 14 | 0 | 0 |
| 10 | 0 | 2 | 0 |
| 11 | 0 | 0 | 0 |
| Total answers | 25 | 16 | 9 |
| Priority values | | | |
| 1 | 2,0 % | 4,0 % | 8,0 % |
| 2 | 2,0 % | 2,0 % | - |
| 3 | 8,0 % | 4,0 % | - |
| 4 | - | - | - |
| 5 | 2,0 % | 2,0 % | 4,0 % |
| 6 | - | 6,0 % | - |
| 7 | - | 2,0 % | 6,0 % |
| 8 | 8,0 % | 8,0 % | - |
| 9 | 28,0 % | - | - |
| 10 | - | 4,0 % | - |
| 11 | - | - | - |

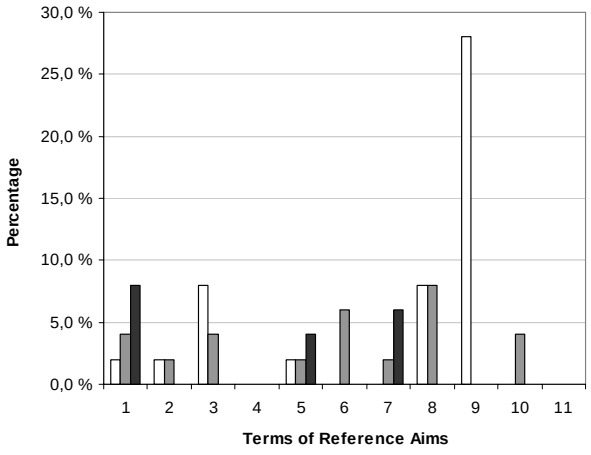



Fig. 6 Graphic distribution of priority level votes on Terms of Reference strategic aims

Primarily, the results reflect the importance given by the population to solutions to their immediate local basic needs. Planning and location of community public facilities constitute the most voted aim with higher priority, followed by reconstruction and restoration of existing buildings, and access to basic infrastructures and services.

Such results express local territorial weaknesses, representative of multifunctional suburban housing areas, with a clear degradation of existing building stock.

On the other hand, access to basic infrastructure and services was the most selected with medium priority relevancy, although in this category the results were not so clear with less total votes. The second most voted aim, with medium priority, was promotion of protection to the ecological structure, ecosystems renewal and the expansion of naturalized spaces through the connection to the Natural Park.

Globally, there was a smaller number of answers in the category of low priority, in comparison to the total number of answers. This result is probably due to the fact that present participants were more concerned with immediate needs, instead of giving importance to not so critical actions, as were the objectives of previous categories.

The process of involving the public makes the results more relevant to the population's needs. In fact, participation provides local knowledge and thus makes the planner decisions more appropriate to local specificities. Results were later inputted at Stage 2, on SWOT analysis, contributing to the reference situation characterization, and discussed on plan design proposal, at Stage 3.

Thus, high priority action policies should focus on determining and planning the required health, education, sports, culture and leisure community facilities, in complement of existing buildings restoration, as well as providing equity in access to infrastructure and services, in particular water and wastewater systems, within short term implementation strategies.

## V. CONCLUSION

Given the diversity and specificity of the natural and urban environment, planning solutions must always be adapted to each case. Therefore, a sustainable urban planning process has to show an open and flexible methodology, always guided by the principles and strategic goals leading to sustainable development.

Only through a new planning process approach is possible to walk in the path of Sustainable Development. The presented sustainable urban process, given its open and flexible structure, permits interventions on different realities and site dimensions, allowing the analysis of the characteristics on each case, its potentialities, weaknesses and opportunities, guiding the project's planning process.

The implemented public participation process allowed the population's intervention, occurring from the first stage of urban planning, contributing to the definition, determination and validation of its terms of reference and SWOT analysis.

Furthermore, community participation enabled that the intervention area resources (human, natural, economic and cultural) are valued by the local agents and thus constitute the basis for the creation of proposed new sustainable activities, developing employment and wealth, preserving natural values

and promoting an appropriation of public space with greater social sensitivity and responsibility.

## ACKNOWLEDGMENT

´The authors want to express their acknowledgment to Municipality of Cascais in Portugal for the important collaboration to implement the developed operative planning process and to all the population who participated in the different phases of the elaboration of the *Malveira da Serra and Janes Plan*.

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