THE ECONOMIC AND SOCIAL EVALUATION FOR STRATEGIC PLANNING AND SUSTAINABLE DEVELOPMENT OF PESCARA CITY IN 2020

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ABSTRACT

The paper is framed within the strategies for the development of Pescara city. We propose a revisiting of the *Analytic Hierarchy Process* in defining the regeneration of a *brownfield site* near the port area of Pescara, in order to help the Administration in the complex decision-making about urban transformations and re-use of facilities. The urban renewal of some strategic areas for Pescara city requires to comprehend the overall urban system. Thus, the use of the AHP is aimed to define suitable functional solutions which can transform these areas in effective drivers of development and competitiveness for the city. From the mathematical point of view is given an interpretation of the scores assigned by the AHP in terms of *conditional probability*. This interpretation should not be understood in strictly semantic sense, but in a formal sense, that is based on the idea that the scoring has the formal properties of a assessment of coherent conditional probability.

Keywords: strategic planning, urban renewal, sustainability, evaluation, decision support system aid

1. Introduction

In the recent past sectoral and fragmented approaches to urban planning caused the lack of a solid *strategic framework* and the absence of a *shared vision* of development. The basic idea is the need of a *comprehensive view* for a specific territory, elaborating an *integrated and sustainable vision* for the future development of an area. This requires processes of *inter-institutional programming* and *interaction* between various interests and different policy areas, and the need to *evaluate* the development strategy referring to the conditions of environmental, social, economic sustainability. Strategic planning is an *innovative and voluntary tool* of urban governance; in the context of Abruzzo these new forms of *multilevel governance* for urban areas aim to integrate four different settlement systems: the major urban centers, the City of linear costs, the smaller urban centers, the living landscape. The paper focuses in particular on the idea about Pescara city in 2020, as described in the Strategic Plan developed in 2006. In this Plan we find a vision of Pescara as *gateway city*, related to the geographic position of the city in the Euro-mediterranean context along the transversal Tirreno-Adriatico axis. As consequence, the general objectives of the Strategic Plan are referred to *strengthening of the advanced services in the wide Area of Pescara/Chieti/Ortona* as logistics platform in the Middle Adriatic; *strengthening of tourism and culture*, *social cohesion and cooperation* in the suburbs.

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However, the strategic vision of transforming the city seems not to develop the improvement of the connections between the areas covered by recent renewal. The main recent processes of urban transformation on important areas for the city are opportunities to renew some representative spaces and quality services, but such actions are likely to remain without a logical functional connection.
In most cases considered, it appears the need to define clearly the *objectives*, the *specific priorities* and the *alternatives* for each urban area to re-use, in order to make *rational and transparent* the public decisions and to account for the reasons of certain choices to the citizens.

2. New challenges for european cities: competitiveness, social inclusion, sustainability, multilevel governance

The territorial dimension of EU cohesion policy concerns urban and rural areas; it involves the issues of *development* and *competitiveness*, tangible and intangible *connections* and *quality of life*, always considering the specific needs and peculiarities of places.
The complexity of the territorial government requires a strategic approach to planning and urban management. In this sense, the *Strategic Plan of the City* aims to enhance local resources for the development of a territory, without defining regulations for the urban transformations. Strategic planning outlines an average long-term regeneration of the city, through a process of ***multilevel governance*** to obtain a *shared vision* of the future urban development. The Strategic Plan of the City is the result of a sharing process; it is promoted by the municipality which provides guidelines for the urban regeneration, in order to overcome urban and territorial disparity; strengthening the urban and regional infrastructures and their connections with the trans-regional, national and european infrastructure systems; improving the public capacity building to promote local partnership, alliances and networks at *wide area* level.

2.1 The Strategic Plan of Pescara 2020: considerations for the future of the city

In 2006, the Municipality of Pescara has established a technical committee for the elaboration of the Strategic Plan of the city. This plan is "the ambitious scenario for development programs of Pescara in 2020". The work plan involved a first phase of listening to a series of actors and stakeholders of the city (July 2006), in order to identify the vocations on which to focus *four Axes* of intervention with the relative *strategic objectives*. The basic theme of the debate was about the importance of the *business relations* for the city, its geographic position in the context of the Adriatic Sea and the Mediterranean Sea[1]. This is emphasized in the *first Axis* of the plane, in which the vision of Pescara emerges as *a center of advanced services*, a place in which to exchange tangible and intangible assets along the transverse Tirreno-Adriatico line. The *strategic objectives* of this Axis refer to the strengthening of advanced services and training of human capital; strengthening of trade within Europe between east and west; promotion of different forms of expression of contemporary culture, with expansion of space and facilities for culture.
The *second Axis* of the Strategic Plan refers to mobility and logistics in a *wide area*. The role of Abruzzo in the business connection into Eastern Europe is underlined again. In this sense, the Plan remarks the need to strengthen the logistical and infrastructural facilities of the metropolitan area Chieti-Pescara-Ortona "as a system". The *strategic objectives* of this Axis refer to the improvement of accessibility as a factor of quality of urban environment; strengthening of the metropolitan area of Pescara-Chieti-Ortona as a logistics platform in the Middle Adriatic. The *third Axis* of the Plan is about the elements and factors of a renewed appeal, with reference to the general issues of culture, tourism and built environment quality. The theme of urban regeneration is emphasized as "one of the main levers to increase the competitiveness

[1] The documentation on the Strategic Plan of Pescara has been downloaded from the website of the City of Pescara; as well as the photographic material in the paper is from various websites.

of the territories". The *strategic objectives* of this Axis refer to the vision of Pescara city as a place for culture, tourism, sport and leisure. Finally, the *fourth Axis* of the Plan concerns the issue of quality of live and cohesion, with special reference to the need to resolve the lack of services and the high density of population in the most disadvantaged suburbs. The *strategic objectives* of this Axis include the reinforcement of social cohesion and cooperation with respect to the positive effects of the Urban II program for a marginal part of the city which presents important critical questions (the presence of homeless people, the need for socio-economic integration of immigrants). The theme of urban environmental quality is underlined in relation to "*specific rehabilitation interventions in some areas of great importance for the city*" and to "***a renewed relationship between the city and the river***".

The "vision of the future" emerging in the Plan is consistent with the higher-level programs for territorial development of Pescara, so we can find general indications to promote competitiveness and *no decisions* to solve the needs expressed by some important areas of the city. Therefore we propose the show some *strategic areas* in Pescara, with reference to rail, port and river, and disadvantaged neighborhoods within the Urban II area (fucsia circle, Fig. 1).

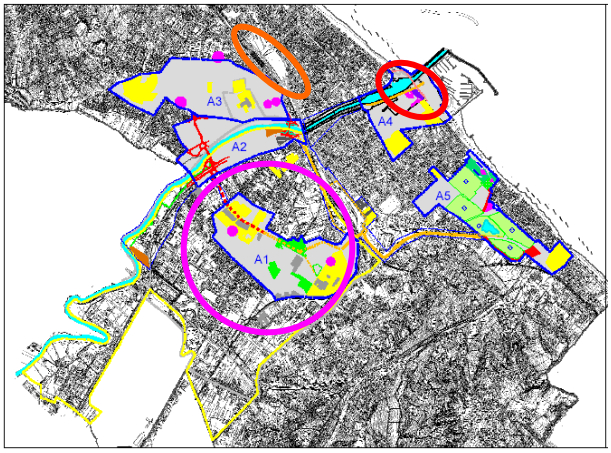

Figure 1. Plan of Pescara - Main strategic areas of intervention

In particular, the main urban issues refer to the presence of a large *disused central area* waiting a functional re-use (orange circle, Fig 1); the gap between *the port and the city* (red circle, Fig.1); the *railway which divides the city* and the relative problems of accessibility and urban mobility between the east and west sides; the relationship between *the river and the city*; the connections between the central areas of the city and the marginal areas under recent regeneration in the Urban II zone. The formulation of a Strategic Plan of the city requires to make choices and to focus the *priorities* of different actors in order to identify a shared idea for the urban development. For that reason it is important to identify the *objectives* to be pursued, the specific *priorities* of these objectives and the *alternatives* of intervention for each urban area to be re-used, always considering the overall urban structure desired for the city.

3. Evaluative aspects of urban policy: a decision support system for urban renewal of a brownfield site in Pescara city

The aim of the paper is to formulate a *decision model* for the functional re-use of urban areas considered as "strategic" for the future redevelopment of Pescara city. The complexity of the objectives to be taken into account requires the construction of a *hierarchical decision scheme*, in order to choose the *preferable alternative* of intervention for each area to be improved. The decision model is applied to a case study,

analyzing alternative scenarios of urban transformation for an area located near the tourist port of Pescara, and coincident with the "PP2" detailed development plan - the *port area*.

3.1 Case study

The *port area* of Pescara city is characterized by wide disused areas: a large storage of fuel and an ex market of vegetables (*ex Cofa* area). The port appears separated from its urban and territorial context; this is a common peculiarity for many *Italian port cities*. The entire area of the *PP2 detailed development plan* is covered by the Port Master Plan (2008), which is still under evaluation by the maritime authorities in consultation with the municipality. The indications of the General Master Plan (PRG, 2007) for the *PP2-sub B* (ex storage of fuel area, facing the river) refer to the carrying out of an *integrated tourist and residential center* characterized by pedestrian and cycle crossings in relationship with the *river harbor*. In *PP2-sub C* (area facing the sea), characterized by public property (Abruzzo Region) for a considerable proportion, the PRG instructions refer to the realization of an *integrated center for tourism and leisure* in immediate relationship with the *tourist port*.
In the PP2 area, an important urban disused area is represented by the *ex Cofa* market (PP2 sub C, see red circle Fig. 2). This area covers approximately 4 hectares and it is configured as "strategic" for the regeneration of the port area and the waterfront of Porta Nuova zone. The complex is now in a state of total disuse, after the transfer of the fruit and vegetable market to another site in 2002. In the last few years there were many proposals by public and private actors for the redevelopment of this area[2]. The peculiarity of the area is closely related to the presence of the *tourist port*, as terminal of a global transport network framed within the Adriatic Corridor and the wide context of trans-European networks planning ("Lisbon-Kiev" Corridor V and "Bari-Burgas" Corridor VIII). The regeneration of the area represents an opportunity to remind the *relationship between the city and its port*, improving the function of *gateway city,* so to produce flows and generate economies.

Figure 2. Aerial view of Pescara and the area *ex Cofa* in the red circle

3.2 Structuring the decision problem

Starting from the *vision* of Pescara as *gateway city*, such as described in the Strategic Plan of the city, we propose to structure the decision problem on the *regeneration of the port area*. At first we identify *the main question* (goal) to be resolved, subsequently the *multi-level strategic objectives* (clusters) with the relative *sub-objectives* (criteria or elements), and finally the *alternatives of intervention* for the area. The goal is the *general objective* to be pursued; it concerns the improvement of the strategic position of the port area. The *multi-level strategic objectives* are defined as it follows:

[2] In this area - owned by Regione Abruzzo – the Chamber of Commerce aims to carry out projects of public interest in the revitalization of the marina (from local newspapers). However, the ideas proposed by the Chamber of Commerce will have to adapt to the main lines that the urban local government will draw up within the detailed plan of the waterfront in the Porta Nuova area.

- *regional and upper-regional level*, considering the contribution of the intervention to the achievement of the National Strategic Frame (NSF) objectives for the 2007-13 programming; the objectives of the European Regional Development Found (ERDF) Program for Abruzzo ("*Territorial Development*" Axis IV), and the guidelines of the 2011-13 Regional Budget Document in relation to urban policy and planning. At this level of the decision problem structure, the objectives formulated remark the strategic position of Abruzzo at national and international context, being a region of central importance in the Euro-Mediterranean area; this peculiarity is underlined in the same NSF. At this level of the decision making scheme, it is therefore considered appropriate to take into account the main priorities of the *interregional cooperation in the Balkans* to net cities and synergies for *sustainable spatial development* of Mediterranean space;

- *local level*, considering the consistency of the intervention with trends of municipal planning, with particular reference to urban renewal programs outlined by the General Master Plan and Port Master Plan of Pescara city, in relation to urban, economic, cultural issues[3].

Fig. 3 PP2 detailed development plan – area sub B and C

The ***alternatives*** refer to possible *scenarios* for the transformation of the port area. We have identified *three alternatives* for the redevelopment of the area of PP2, coherently with the urban development strategies (General Master Plan[4] and new Port Master Plan indications, Strategic Planning for the city in 2020) and on the basis of the analysis of best practices in redevelopment of port cities and urban waterfronts.

Tab. 1 A*lternatives of intervention*

Scenarios	**Description**
Hotels, accommodation facilities, University of the Sea	It represents one of the first transformation solutions analyzed. The proposal regards hotels facing the piers in the ex Cofa area; restaurants, shops, offices in the area facing the river (PP2 sub C), and a third university for the city, as the structure of education and research on activities of the sea, with particular reference to international law, yacht design and new materials for

[3] In formulating the objectives of the decision network we have considered the document "Guidelines of planning for the reorganization of the port areas of Pescara" (Prof. arch. R. Pavia).

[4] We thank the Councillor responsible for municipal Urban Planning of the City of Pescara to have provided some information about recent policy orientations of the Administration for reuse of the port (PP2 subarea).

	shipbuilding, marine biology. The solution can be thought referring to the regeneration of the port of Palermo, where the "water district" was projected for the industrial buildings renewal, new laboratories and exhibition spaces for contemporary art, in order to carry out new forms of sociality and residences on the water.
Recreational and tourist organizations, residential centre, river margins enhancement	This is the most recent proposal for the area, in order to realize commercial and conference structures, hotels, new residences, organizations for leisure activities to enjoy the sea. The solution can be thought referring to the sustainable neighborhoods recently realized in similar European and national urban context. A clear example is the city of Malmo with the regeneration of Western Harbour, where the residential quarter is the first in Europe with zero emissions, entirely fed by renewable energy. Other references to the best practices are certainly recognized in the regeneration of the port of Rotterdam and in the strategic planning of Barcelona and Trento.
Alternative "zero"	It represents the alternative without intervention. The area has particular environmental value; in the absence of intervention the port area continues to be separated from the urban context. The same marina (tourist port) seems to be a wide void space unrelated to the city.

The scheme of decision problem is illustrated in the following Table 2.

Tab. *2 Strategic Objectives (clusters) and sub-objectives (criteria or elements within the clusters)*

LEVELS	**OBJECTIVES (CLUSTERS)**	**SUB-OBJECTIVES (CRITERIA OR ELEMENTS)**
Upper-local (regional/ upper-regional)	Urban Issues	- C1) Contribution to the integration of regional territorial systems - C2) Connection to the infrastructural network including the "asse attrezzato", airport, interport of Manoppello - C3) Significance of the urban transformation project in terms of improving the image of the city
	Economic Aspects	---------- - C4) Contribution to cross-border cooperation in the Balkans with the possibility of creating an axis of services between the cities of the Middle Adriatic - C5) Improving the attractiveness and competitiveness of the city through the strengthening of management functions and service - C6) The contribution of project to innovation and entrepreneurship
	Social Aspects	---------- - C7) Improvement of advanced services - C8) Strengthening human capital
Local	Urban Issues	- C9) Strengthening of urban connections; functional integration with the main strategic areas of the city - C10) Consistency with the vocation of area - C11) New usage of the territory (creation of public green spaces, accommodation, commercial area, etc.) - C12) Creating a new urban landscape and landmark (reminding new urban symbols and widespread regeneration) - C13) Introduction of innovative forms of living

	Economic Aspects	- C14) Importance of the *tourist issue* of the intervention (both enjoyment and attractiveness of the site for every seasons) - C15) Innovative services for local people - C16) Employment impact - C17) Enhancement surrounding areas
	Social Aspects	- C18) Coherence with the expectations of the urban community - C19) Improving quality of life, with attention to the needs of children, social integration and problems of marginalization

4. Methodological considerations and research perspectives

All the elements to be taken into account are showed in the aforesaid schema for the choice of alternatives about the redevelopment of the port of Pescara. Than we can proceed to formulate the decision model using the *hierarchical linear model* of AHP, with unidirectional relationships of dependence between elements of different decision levels. The *ranking of* the alternatives is derived by comparing the elements in pairs on each level with respect to higher-level element. The procedure starts with the assignment of judgments of importance to the elements of the second level of the hierarchy (*strategic objectives*) with respect the *supra-regional scale* and the *local level* (Fig. 4), and proceeding with the pairwise comparison of *sub-objectives* in relation to specific higher strategic objectives. Finally we compare the alternatives with respect to the multiple sub-objectives, in the well known formulation of Saaty [Saaty, T.L., & Vargas, L. G. (1991)].
The hierarchical structure associated with the AHP is then represented by a directed graph, where vertices are the overall aim, objectives, sub objectives, etc.. and the arcs connecting a vertex of a higher level with a lower level.
We believe this will be useful to enlighten some interesting methodological issues, an interpretation of the structure in terms of events, conditional events and conditional probabilities in the sense of (De Finetti, 1970) and (Dubins, 1975). The vertices of the graph can be viewed as events, in particular the overall aim is the certain event.
The score associated with arc (H, E) can be viewed as the conditional probability of E/H. The condition of normality, the sum of the scores associated with the outgoing edges from one vertex is equal to one, derived from the axioms of conditional probability.
Of course the interpretation of scores as the conditional probabilities is not to be understood in strictly semantic sense, but in a formal sense, that is, the idea seems plausible that the scoring has the formal properties of an assessment of conditional probability.
One advantage, as a result of this interpretation is the ability to assign useful meaning to possible new arcs that want to establish a relationship of dependency back, that is, between a vertex belonging to a lower level and one belonging to a higher level.

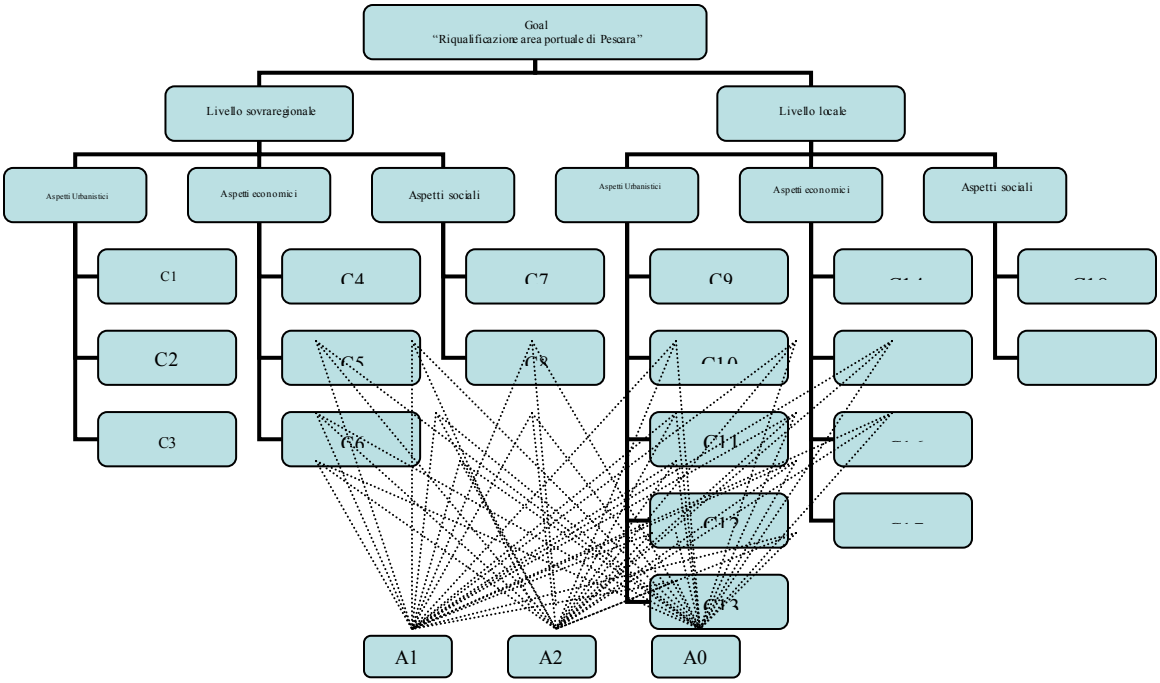

Fig. 4 Hierarchical linear diagram of the decision problem

This is especially useful if - more than a decision-making structure which proposes a *hierarchical linear* decision model (a graph) with interactions due to the same hierarchy of elements - we try to investigate the issue of research using a *network model* with respect to the ANP methodology for decisions (Saaty, 2005), with interactions that can take place either between the "cluster" (strategic objectives) or the "elements" (sub–objectives or criteria) belonging to the same cluster. In this case, the method allows to consider a variety of quail-quantitative criteria characterized by interdependence; it is especially suitable when we are in presence of complex problems, with interaction and feedback between the elements. In such cases, not only the importance of criteria helps to determine the priority of the alternatives, but also the importance of the alternatives affects the policy.

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