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HYBRID EVALUATION TOOLS FOR OPERATIONALIZING UNESCO HISTORIC URBAN LANDSCAPE APPROACH

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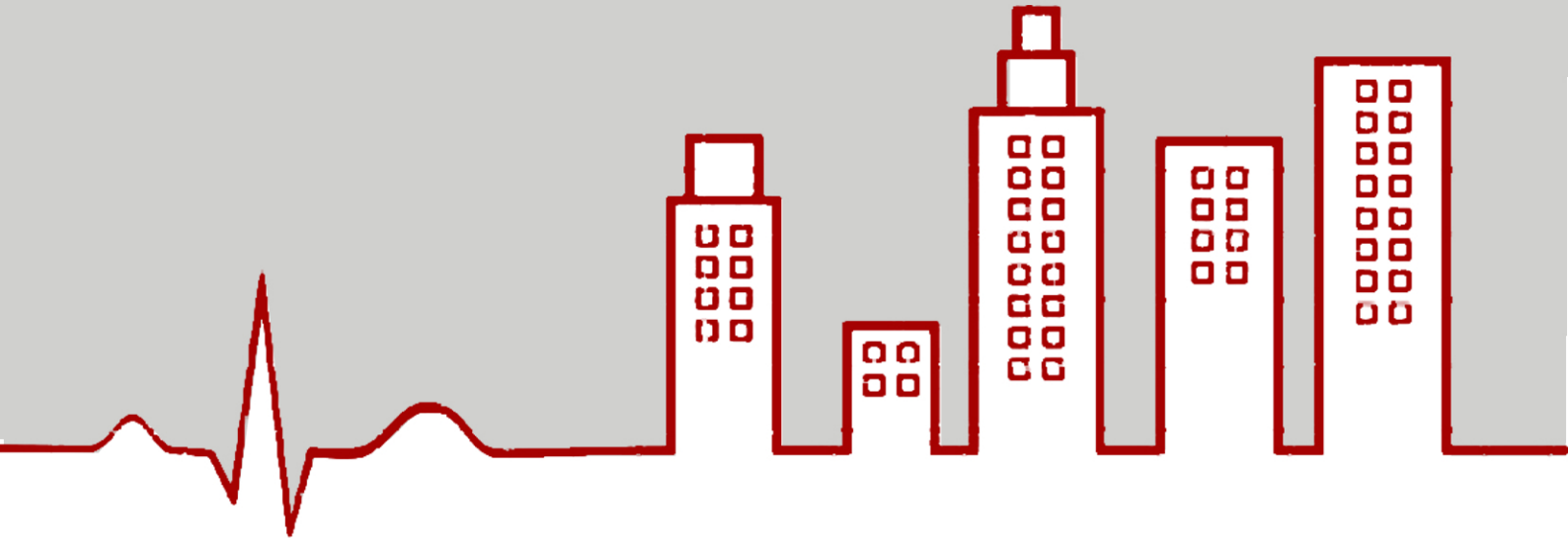

HYBRID EVALUATION TOOLS FOR OPERATIONALIZING UNESCO HISTORIC URBAN LANDSCAPE APPROACH

A Giovannella

che mi ha dato tanta forza ed entusiasmo,

che ha sempre creduto in me

Ai miei genitori, a mia sorella

che mi sono stati sempre vicino, in ogni momento,

in ogni scelta e in ogni traguardo della mia vita

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Introduction

The present thesis is part of the international debate about the role of cities in the achievement of sustainable development.

Today we live in an increasingly urbanized world. Half of humanity, about 3.5 billion people, lives in cities today and this trend is expected to continue.

The rapid and growing urbanization implies having to face some important challenges, from the increasing demand for affordable housing to efficient transport systems to other infrastructures and services supply, as well as to provide employment.

The thesis stresses the role of cities and human settlements to shape the implementation of Sustainable Development Goals (SDGs) in an increasingly urbanized world (United Nations, 2015a).

The challenges that cities are facing today require the identification of new models to increase urban productivity. It is necessary to rethink traditional models exploring and critically integrating alternative development models (i.e. innovative planning, financial and civic tools, new forms of governance and management).

This implementation requires innovative and transdisciplinary approaches, regulatory and financing tools, new evaluation tools, new business/management models.

In order to move from theory to practice and verify the effectiveness of the new models, new evaluation tools are required.

The thesis aims to make operational concepts driving sustainable transformations of cities and territories in the evaluation field. Its purpose is to put into operational terms concepts and categories identified by international organizations, otherwise at risk of being confined to a purely abstract reflections.

In the ***first chapter,*** an overview of the actual international debate about sustainable development is presented.

Starting from some definitions of sustainable development, this chapter deals with the analysis of international debate about this issue. After a short overview of significant data about cities urbanization, the 2030 Agenda for Sustainable

Development and Sustainable Development Goals (United Nation, 2015a) and also the UN Conferences on Human Settlements, from Habitat I to the last Habitat III Conference (Quito, October 2016), are analysed.
Habitat III Conference represented a great opportunity to discuss the role of cities in sustainable development, that is how they need to be planned and managed for becoming drivers in this process and to become more "inclusive, safe, resilient, and sustainable".
The analysis of the New Urban Agenda (the outcome document of Habitat III), in particular of paragraphs related to means of implementation, highlights the necessity to move from principles to practices (United Nation, 2016a).

The city's organizational structure is being increasingly questioned. It produces economic wealth, but also consumes ecological and social wealth.
About half a billion of people live in coastal areas; it increases coastal vulnerability to storm surges and sea level rise. The present thesis mainly focuses the attention on the historic port cities because of their peculiar characteristics.

Starting from these considerations, the ***second chapter*** is related to port cities. They are characterized by a significant potential for commercial, tourist, industrial activities etc.; they can be considered a driving force for economic growth but, at the same time, they can be source of economic, social and ecological damages.
In port cities strong development potentialities and contradictions take place; in fact, they are the place where the economic wealth is produced but, at the same time, negative environmental and social impacts are localized. They are the place where competitiveness, human capital and global appeal, population and migration processes are mainly concentrated.
At the same time, port cities offer a lot of opportunities for economic productivity, social cohesion and ecological resilience. The key issue is to transform contradictions and problems into opportunities through a good government, management and planning.

Today, the relationship between port and city is become a central issue in the sustainable development framework. There is the necessity to develop ports and, at the same time, the will to use their potential as driver for overall city regeneration.
Port and port-city system can be able to produce multidimensional benefits and mitigate negative impacts due to development. In this chapter some good practices about port cities regeneration from all over the world are analysed.

The ***third chapter*** aims to analyse the role of cultural heritage/landscape in urban sustainable development.
The European Commission recognized the key role of cultural heritage/landscape in sustainable development. It plays a key role in enhancing living conditions, social cohesion, community wellbeing and prosperity. In 2014 the Council of European Union, considering cultural heritage as common good, defined guidelines "towards an integrated approach to cultural heritage for Europe" that highlights this strategic role of cultural heritage (European Commission, 2014). It represents an important economic resource in global competition.
This research is part of the current particular historical moment in which the economics of conservation is brought into questioned; in particular, the economic value of cultural heritage is questioned.
The concept of cultural heritage and its values are discussed in the first section of this chapter. The recognition of the role of cultural heritage/landscape in sustainable development is then analysed through the examination of international conferences and documents, with particular reference to 2030 Agenda for Sustainable Development (United Nation, 2015a) and The New Urban Agenda (United Nation, 2016a).
The UNESCO Historic Urban Landscape approach (HUL) (UNESCO, 2011), the latest contribution of the international debate on the identification, conservation and enhancement of cultural heritage, is analysed in depth.

In the last decades, the attention has moved from the “monument” to the context, to the recognition of the importance of social, cultural and economic processes in the conservation of urban areas (UNESCO 2011, art. 4).

Currently, the UNESCO document introduces theoretical criteria for Historic Urban Landscape conservation, but it is still lacking tools that should to operationalize it; it is focused on “*what* needs to be managed and *why*” (Pereira Roders, 2013) and not on *how* to implement these recommendations.

In order to achieve a productive symbiosis between conservation and development, particular attention has to be paid to tools operationalizing the Historic Urban Landscape approach.

The notion of cultural heritage/landscape is inseparable from its multidimensional nature; thereby, it requires an “inclusive approach” able to include the dynamic dimension of cultural landscape and its multiple values/dimensions.

Although international debate about Sustainable Development Goals (SDGs) recently highlighted the role of cultural heritage in sustainable development, it is explicitly mentioned only once in the Goal 11 (“make cities and human settlements inclusive, safe, resilient and sustainable”), particularly in the target 11.4, regarding “strengthen efforts to protect and safeguard the world’s cultural and natural heritage”.

To date, the result of a series of public consultations with agencies and organizations has been only one indicator related to the Target 11.4. It is an oversimplification too much limiting that cannot represent an indicator of effectiveness. It has some methodological problems and it is not able to capture the whole multidimensional values and impacts of cultural landscape.

It is recognized the need of additional indicators and adequate evaluation tools to asses and monitor the contribution of cultural heritage/landscape to the achievement of the goal 11 (SDGs) and, more in general, of sustainable development.

In this thesis an operational indicators matrix has proposed for evaluating the multidimensional impacts of conservation/regeneration projects, that is for producing

empirical evidence about multidimensional benefits of cultural landscape conservation/regeneration.

The set of proposed multidimensional indicators is deduced from the analysis of about 40 good practices of conservation/regeneration projects.

The analysed impacts, both *on* cultural heritage and *from* cultural heritage, are classified in the following nine impact categories:

(1) Tourism and Recreation

(2) Creative, cultural and innovative activities

(3) Typical local productions

(4) Environment and Natural Capital

(5) Community and Social Cohesion

(6) Real estate

(7) Financial return

(8) Welfare/wellbeing

(9) Cultural value of properties/landscape

Every case study has been deeply analyzed. A sheet related to the indicators (emerged from the analysis) has been elaborated for each of them.

The impact categories are individually analysed and for each of them a set of indicators is identified. Furthermore, some indicators are proposed.

The processing of this database of good practices has the purpose of extracting the indicators for the construction of a matrix (both economic and multidimensional) capable of producing empirical evidence about the "productivity" of HUL conservation/regeneration, that is the multidimensional benefits produced.

In the present research, transformation processes of the cities are placed into a new framework, the circular economy. In a period of great urbanization and natural resource depletion, the challenge is to find new models (economic, financial, etc.) able to increase urban productivity and, at the same time, make development more sustainable, in environmental, financial, economic and social terms. It is necessary to

identify development models to operationalize sustainable development principles of cities.

In this perspective, the circular model, based on principles characterizing natural ecosystems (based on circular processes where nothing is "waste" and everything can become a "resource"), is proposed to operationalize sustainable development principles (***fourth chapter***). Therefore, the challenge is to organize landscapes as natural ecosystems.

The general concept of circular economy is analysed in the first paragraph of the chapter. This model is then proposed as a possible model in city management and regeneration and in particular in cultural heritage/landscape conservation /management and port-city system regeneration.

Circular economy offers great opportunities to increase urban productivity. It is not only referred to waste cycle (European Commission, 2015), but it is the economy of synergies and symbiosis between different industrial activities, city and industrial system, etc. Hybridization is the key concept to transfer the symbiosis from industrial sector to the city in general (architecture, urban planning, etc.). Developing the circular economy in the city means closing the loops, suppressing useless flows, implementing new flows. We can consider the productive city as a city of flows (material and not). This flow-city is characterized by circular and hybridization processes that are able to structure the entire city organization. It fosters symbiotic and synergistic relationships, producing multidimensional benefits.

In the flow-city it is necessary to identify the "cyclifiers" (www.cyclifier.org), part of city/elements able to activate and trigger flows (i.e. port, heritage, etc.), generating a "continuous flow" of material (and no-material) resources. This issue is deeply analysed in the fourth chapter.

Clearly, new evaluation tools are required to verify the effectiveness and productivity of these new models (based on circularization and hybridization processes), that is to move from theory to practice.

The ***fifth chapter*** is focusing on the evaluation tools/approaches.

The above highlighted multidimensional perspective of cities transformation implies a systemic and integrated approach that requires new assessment tools.

Economic approach is necessary, but it is not sufficient. It needs an integrated evaluation tool, in which quantitative economic matrix is enriched with qualitative indicators, expressed by social component (social matrix) and environmental component (ecological matrix).

A brief overview of the evaluation methods is presented. In particular, the Heritage Impact Assessment (HIA) tool is analysed (ICOMOS, 2011). It is the operative tool currently proposed by UNESCO. This is a fundamental tool to understand the impacts of projects on the integrity and authenticity of cultural heritage. It provides a framework for assessing the impacts of urban transformations *on* cultural value of properties, but it has some limitations; for example, it does not include economic and social dimension of heritage conservation. It is based on expert judgement without considering community perceptions and intangible dimension that are important factors of Historic Urban Landscape.

The thesis does not intend to propose a new evaluation method, but rather an evaluation process, capitalizing the richness of existing tools. It aims to provide a tool for supporting decision-makers in the evaluation of impacts of projects at different scale. In this chapter, an operational approach is proposed for the assessment of the impacts *on* and *from* cultural heritage conservation/ regeneration.

The last chapter (***sixth chapter***) deals with the application of the proposed methodology. The case study of Pozzuoli (Italy) represents a concrete implementation of the proposed methodology, demonstrating its application potentialities.

Pozzuoli is an Italian town of 81,856 inhabitants, located on the gulf of the same name, in a volcanic area, the Campi Flegrei (that is burning fields).

It represents a good opportunity to concretely put into practice the issues discussed in the previous chapters, because it is characterized by a valuable cultural and natural landscape and a complex city-port system.

In particular, the attention is focused on the area occupied by the abandoned plants of ex “Sofer”. It is a coastal area 17 hectares large. This area, which represents the core of the project, cannot ignore the relationship with the cultural heritage network around it and the port situated in the immediate proximity.

Indicators deduced from general matrix are selected and used to evaluate the multidimensional impacts of the ex-Sofer area transformation and thus to support and evaluate territorial development strategies, highlighting in particular the role of cultural landscape in the sustainable urban transformation. The indicators are not only referred to this limited area, but they take into account the impacts on the surrounding, in accordance to the perspective of the Historic Urban Landscape approach.

Considering the multidimensionality of the impacts, multi-group and multi-criteria analysis are processed to evaluate the more appropriate combination of functions to valorize the area and the resources of the territory; in other words, to increase city productivity.

In order to identify strategies for socio-economic development of the area, and the city of Pozzuoli in general, the following phases are carried out:

- knowledge phase: analysis of the context, of the existing regulatory instruments and the existing proposals for new functions/area regeneration;
- participative phase: identification of stakeholders (institutional stakeholders and community) for conducting interviews to identify development strategies;
- evaluation phase: multi-group and multi-criteria analysis for the identification of the community preferences (NAIADE method preferences) and the most appropriate combination of functions to valorize the area and the resources of the territory (MacBeth method).

The proposed methodological approach, starting from the proposed multidimensional indicators matrix, is applied in the present case study in order to include multiple dimensions in the evaluation process, supporting the identification of sustainable development strategies. This evaluation approach takes into account the above

highlighted multidimensionality, also including both expert and community knowledge.

Key indicators are extrapolated from the indicators matrix proposed in the third chapter in order to evaluate multidimensional impacts of the choices. These indicators are then processed by two software, including both community and experts opinions/knowledge. Participatory and multi-criteria analysis tools are integrated in a multidimensional perspective.

Multi-group and multi-criteria analyses are elaborated for the identification of community's preferences (NAIADE method) and to evaluate the multidimensional impacts that different choices (about functions to be localized in the ex-Sofer area) can have on the overall objective, that is to increase city multidimensional productivity (MacBeth method). The latter step aims to identify the most appropriate combination of functions that can contribute to the valorization of the area and the resources of the territory.

A combination of a participatory process (interviews and questionnaires) and multi-criteria analysis tools are used to acquire and process information about the stakeholders' opinions and expert knowledge.

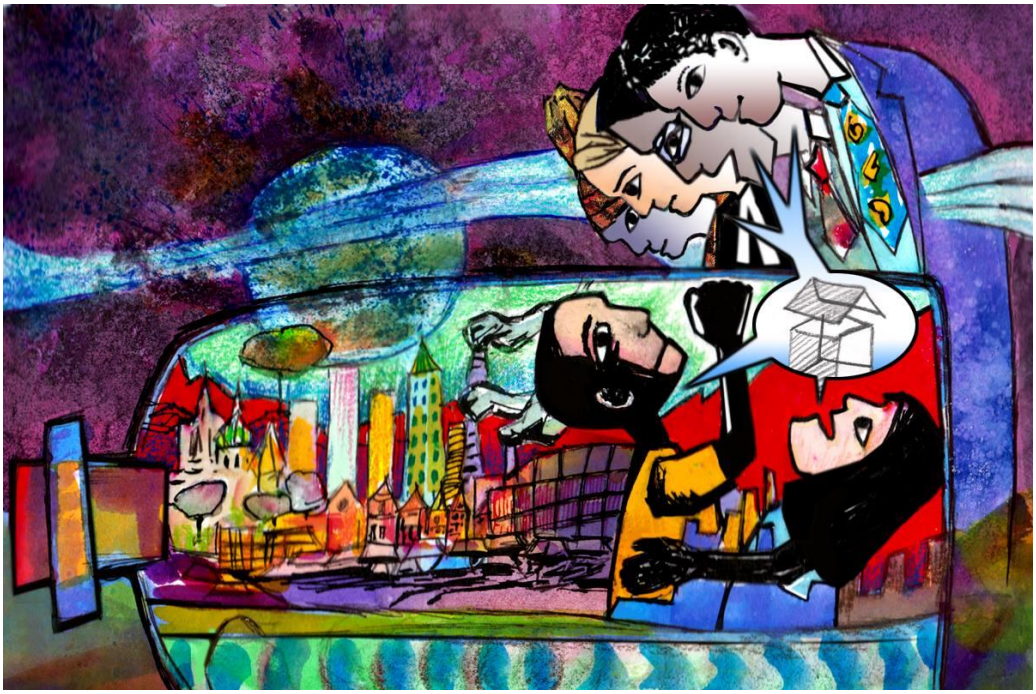
This process allows identifying the level of "acceptability" of choices and helps guide policies and actions and reach consensus in favor of a more effective implementation.

The efficiency of this approach lies in the possibility to evaluate simultaneously multidimensional impacts and establish an exchange of information among experts and different involved stakeholders about multidimensional issues. It allows paving a shared ground for future development; including multiple dimensions and visions; generating and producing ideas and innovative solutions (based also on the possibility offered by participants); increasing the perception of the acceptability of alternative proposals that can lead to an improvement of the alternatives (in a circular perspective).

The proposed evaluation approach and the multidimensional indicators matrix aim to provide a valuable tool for supporting city regeneration/valorization projects/management strategies, conscious that the historic urban landscape conservation does not represents a cost, but an investment able to increase multidimensional productivity of cities.

This research intends to provide an operational approach to support decision-makers to orient and assess choices addressed to the achievement (and the increase) of city multidimensional productivity. The matrix of indicators can represent a general indicator framework that can be used to evaluate cultural landscape impacts in different territorial situation, but contextualizing it case by case. The choice of key indicators to be considered depends on the aims of the projects, the location and scale of intervention (building, site, etc.). The proposed indicators matrix can be used both for ex-ante and ex-post assessment.

1. THE ROLE OF CITIES IN SUSTAINABLE DEVELOPMENT



Source: www.citiscope.org - www.venantiusjpinto.blogspot.com[1]

1.1 Introduction: an overview of cities today

In this period cities are facing three important challenges (related to economic, social and environmental crisis) referred to three great changes: demographic changes (population growth), structural changes (globalization) and environmental changes

[1] Title: "Peering at vicissitudes, and wrought agendas"
Author: Venantius J. Pinto - Designer & Illustrator, New York
Website: www.venantiusjpinto.blogspot.it - https://www.flickr.com/photos/venantius/sets
Venantius J. Pinto is the author of this very interesting and inspiring drawing. It has been commissioned for Citiscope project (www.citiscope.org) with the aim to illustrate while Habitat III would be in session and to provide designs for the explainers.
„The drawing is referred to cities, urban and metropolitan areas, in developing and developed countries, as well as to urban planning and international development. It represents a bottle with figures pointing to a metropolis contained in the bottle. The city is contained in a battle meaning that it was under observation during Habitat III, in a benign and compassionate manner. Habitat conference has been about governments, civil society and cities themselves coming together to discuss new strategies to make cities better; so the sense of nurturing from the outside and inside is important to convey". Venantius, through this very impressive drawing, has well represented the necessity of a dialogue between communities (living in cities) and experts (urban planner, etc.), that is between common and expert knowledge in order to achieve a more shared and sustainable development strategies of cities.

(climate change, pollution, etc.). All these challenges are interdependent and thus they need systemic solutions. These interdependences are actualized in the space of cities.

Today we live in an increasingly urbanized world. Half of humanity, about 3.5 billion people, lives in cities today and this trend is expected to continue (www.worldbank.org). By 2030, almost 60 per cent of the world's population will live in urban areas. But, at the same time, cities occupy just 3 per cent of the Earth's land (accounting for 60-80 per cent of energy consumption and 75 per cent of carbon emissions (www.un.org). This rapid urbanization is having negative impacts on water supplies, sewage, living environment and public health.

The growing urbanization, as well as climate change, environmental crisis, loss of biodiversity, acidification of the oceans, reduction of the stratospheric ozone layer, etc. represent important transformations that today reveal the diffusion of progressive unsustainability that is "devouring" our country.

The city is a "living organism" (Geddes, 1915) in constant evolution and affected by the transformation of society. The city is a "victim" of modern man, a man who tried to fix everything as if he was working with a machine, altering the performance of the city itself and its capacity to produce, maintain and ensure well-being of populations (Calfati, 2010).

Considering cities generating 80 per cent of global Gross Domestic Product (GDP) (www.worldbank.org), urbanization can contribute to sustainable development; this is possible only if it is well managed by increasing productivity, allowing innovation and new ideas to emerge.

The rapid urbanization implies having to face, at the same time, some important challenges, from the increasing demand for affordable housing to efficient transport systems to other infrastructures and services supply, as well as to generate jobs.

Cities are also great energy consumers; in fact, they consume close to 2/3 of the world's energy and account for more than 70 per cent of global greenhouse gas emissions. So, they have a key role in the challenge to the climate change.

Due to the urbanization, cities are increasingly exposed to climate and disaster risks. About half a billion of people live in coastal areas; it increases coastal vulnerability to storm surges and sea level rise.

Make cities "inclusive, safe, resilient, and sustainable" means to find intensive policy coordination and investment choices. In this framework national and local governments play an important role.

Here below a synthesis of significant data characterizing our cities today (table 1).

Tab 1 – Overview of data in our cities

50 per cent of population (about 3.5 billion people) lives in city
By 2030, about 60 per cent of humanity will live in urban areas
Cities represent 3 per cent of the Earth's land
Cities account for 60-80 per cent of energy consumption and 75 per cent of carbon emissions
95 per cent of urban expansion in the next decades will be in developing countries
828 million people live in slums
Cities generate more than 80 per cent of global GDP
Cities consume close to 2/3 of the world's energy
Cities account for more than 70 per cent of global greenhouse gas emissions.

Data from www.un.org; www.worldbank.org

Considering the above-mentioned data, it is evident that cities can play an important role in sustainable development.

Before analysing international debate about the achievement of sustainable development, it can be useful to analyse some definitions of sustainable development.

The concept of sustainable development dates back to 1970s, when the awareness of risk related to the traditional development (the collapse of natural systems) associated exclusively to economic growth began to spread.

It began a greater interest towards environmental issues, considering the only economic development no longer sufficient.

The most common definition of sustainability is provided in 1987 from the Word Commission on Environment and Development in the "Our Common Future" report (well-known as Brundtland Report). It defines sustainability as "a process aimed at achieving environmental, economic and social improvement, both locally and globally, or a state that can be maintained at a certain level indefinitely. This process binds in a relationship of interdependence, the protection and enhancement of natural resources to the economic, social, in order to meet the needs of the present generation, without compromising the ability of future generations to meet their own needs. So it is incompatible with the degradation of heritage and natural resources, but also with the violation of human dignity and human freedom, with poverty and economic decline, with the lack of recognition of the rights and equal opportunities" (United Nation, 1987).

According to this definition, the concept of sustainability is connected to the compatibility between the economic development and environmental protection. Furthermore, it emphasizes the role of development to ensure the satisfaction of the present generation needs, without compromising, at the same time, the possibility of future generations to achieve them (intergenerational responsibility in the use of resources). This perspective recalls the need to combine the three fundamental dimensions of development: Environmental, Economic and Social (United Nation, 1987; 2012).

The United Nations Conference on Environment and Development, held in Rio de Janeiro in 1992 (Earth Summit), strengthened the principle of sustainable development through its formalization in the document adopted at the conclusion of the Summit: Agenda 21, the Rio Declaration on Environment and Development, the Statement of Forest Principles, the United Nations Framework Convention on Climate

Change and the United Nations Convention on Biological Diversity (United Nation, 1992a; 1992b; 1992c; 1992d; 1992e).

This conference is important just because of discussing about means to operationalize sustainable development, promoting an action plan for the sustainable development (at international, national, regional level).

Rio acts and the subsequent world conferences promoted by the United Nations, especially the Johannesburg Conference in 2002, confirm the configuration of the principle of sustainable development based on the three interdependent factors: environmental protection, economic growth and social development.

In 2012, twenty years after the landmark Earth Summit, the United Nations Conference on Sustainable Development, also known as Rio 2012, Rio+20, was held. It was the third international conference on sustainable development and it aimed at reconciling the economic and environmental goals of the global community. The outcome document of the Conference contains clear and practical measures for implementing sustainable development.

During the Rio Conference, Member States decided to start a process in order to develop a set of Sustainable Development Goals (SDGs), built upon the Millennium Development Goals (MDGs) and converged with the post 2015 development agenda.

The 2030 Agenda for Sustainable Development (from now mentioned as 2030 Agenda) and the SDGs show the great challenges and opportunities that cities present (United Nation, 2015a).

The Habitat III Conference (held in Quito in 2016) renewed the political commitment for sustainable urban development to assess results to date, to contrast urban poverty and to identify new challenges. The outcome document, the New Urban Agenda (NUA, deeply analysed in the following paragraphs) (United Nation, 2016a), aims to drive the achievement of the 2030 Agenda (with particular reference to Goal 11) as well as other targets across the SDGs, through an action-oriented roadmap for implementation.

The New Urban Agenda represents a way to implement the political and financial momentum that 2030 Agenda and SDGs have already initiated. It acknowledges the SDGs and makes commitments to achieve at least 15 of the 17 goals.

1.2 2030 Agenda for Sustainable Development and Sustainable Development Goals

The 2030 Agenda for Sustainable Development has defined as a plan of action for people, planet and prosperity (United Nations, 2015). It is signed in September 2015 by the governments of the 193 UN member countries.

The 2030 Agenda aims to take transformation measures to shift the world towards a sustainable and resilient future. All countries and all stakeholders, acting in a collaborative partnership, are called to implement this plan.

At the core of the 2030 Agenda there are 17 Sustainable Development Goals (SDGs), for a total of 169 targets (United Nations, 2015). The goals cover the three dimensions of sustainable development: economic growth, social inclusion and environmental protection. All goals are interlinkaged and their relationship is crucial in the achievement of the Agenda purpose.

They come out from the Millennium Development Goals (MDGs) (table 2) that preceded them and that are common objectives on a set of important issues for development, i.e. the fight against poverty, hunger eradication and climate change (United Nation, 2000). “Common objectives” means that they regard all countries and all individuals: no one is excluded nor is left behind on the sustainable path.

The 17 SDGs with 169 targets (table 3) are broader in scope and go further than the MDGs by addressing issues and the universal need for development for all people. They will stimulate action over the next fifteen years in areas of critical importance for humanity and the planet:

“People

We are determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment.

Planet

We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.

Prosperity

We are determined to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature.

Peace

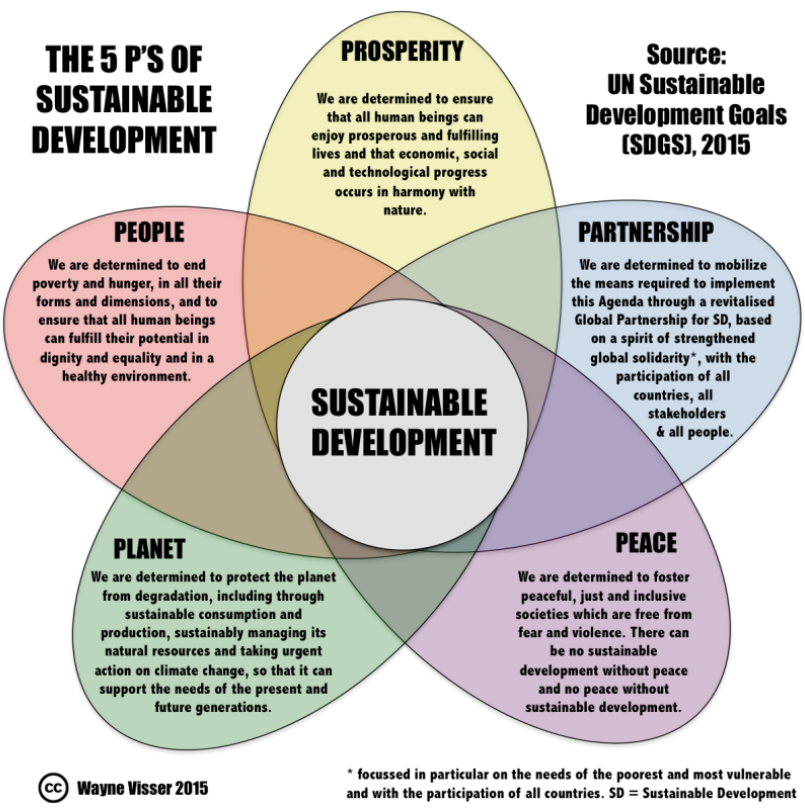
We are determined to foster peaceful, just and inclusive societies which are free from fear and violence. There can be no sustainable development without peace and no peace without sustainable development.

Partnership

We are determined to mobilize the means required to implement this Agenda through a revitalised Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focussed in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people". (United Nations, 2015)

Therefore, sustainable development has "five Ps" (Figure 1) (www.waynevisser.com).

Fig. 1 – The "five Ps" of sustainable development



Source: www.waynevisser.com

These SDGs are a set of goal designed from United Nation for the international future development. They are presented and adopted in New York during the General Assembly (25-27 September 2015).

SDGs represent a new effort and commitment that involve all countries in the economic, social, environmental sustainability for 15 years, until 2030.

The idea is that governments, aid organizations, foundations and NGOs can move in the same direction, resulting in greater impact in the achievement of massive and complex goals, as the eradication of poverty.

They replace the Millennium Development Goal, approved by United Nation in 2000, whose deadline was scheduled for December 2015. These eight goals pointed the

global community in only one direction, common to everyone, on issues related to the developing world. They aim to the eradication of poverty, hunger, illiteracy and disease.

The SDGs keep the list of MDGs intact, updating and enlarging some of them.

Tab. 2 – Millennium Development Goals (MDGs)

MILLENNIUM DEVELOPMENT GOALS
Goal 1
Eradicate Extreme Hunger and Poverty
Goal 2
Achieve Universal Primary Education
Goal 3
Promote Gender Equality and Empower Women
Goal 4
Reduce Child Mortality
Goal 5
Improve Maternal Health
Goal 6
Combat HIV/AIDS, Malaria and other diseases
Goal 7
Ensure Environmental Sustainability
Goal 8
Develop a Global Partnership for Development

Tab. 3 - Sustainable Development Goals (SDGs)

SUSTAINABLE DEVELOPMENT GOALS
Goal 1. NO POVERTY
End poverty in all its forms everywhere
Goal 2. ZERO HUNGER
End hunger, achieve food security and improved nutrition and promote sustainable agriculture
Goal 3. GOOD HEALTH AND WELL-BEING
Ensure healthy lives and promote well-being for all at all ages
Goal 4. QUALITY EDUCATION -
Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
Goal 5. GENDER EQUALITY
Achieve gender equality and empower all women and girls
Goal 6. CLEAN WATER AND SANITATION
Ensure availability and sustainable management of water and sanitation for all
Goal 7. AFFORDABLE AND CLEAN ENERGY
Ensure access to affordable, reliable, sustainable and modern energy for all
Goal 8. DECENT WORK AND ECONOMIC GROWTH
Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
Goal 9. INDUSTRY, INNOVATION AND INFRASTRUCTURE
Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
Goal 10. REDUCED INEQUALITIES
Reduce inequality within and among countries
Goal 11. SUSTAINABLE CITIES AND COMMUNITIES
Make cities and human settlements inclusive, safe, resilient and sustainable

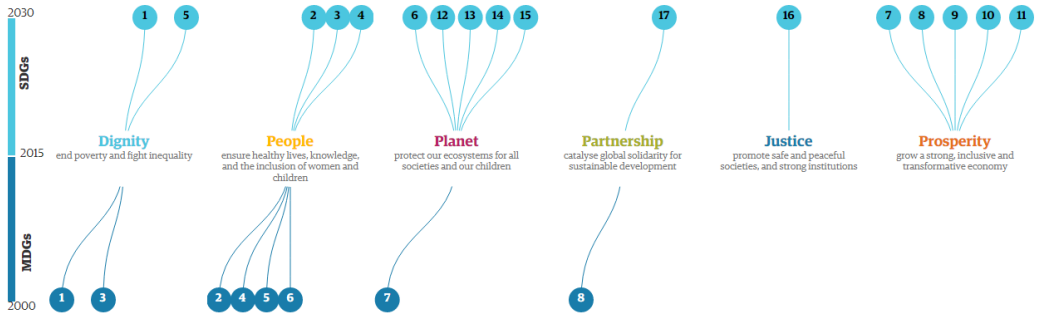
Goal 12. RESPONSIBLE CONSUMPTION AND PRODUCTION
Ensure sustainable consumption and production patterns
Goal 13. CLIMATE ACTION
Take urgent action to combat climate change and its impacts
Goal 14. LIFE BELOW WATER
Conserve and sustainably use the oceans, seas and marine resources for sustainable development
Goal 15. LIFE ON LAND
Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
Goal 16. PEACE, JUSTICE AND STRONG INSTITUTIONS
Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
Goal 17. PARTNERSHIPS FOR THE GOALS
Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

The biggest difference between SDGs and MDGs lies in the involved subjects. In fact, MDGs applied only to countries in the developing world, while SDGs aim to gather the entire globe in the development efforts. They are addressed evenly to all countries, both in developing and developed ones.

Furthermore, MDGs are elaborated by UN Secretariat, while SDGs have been negotiated by Member States with stronger country ownership.

In the following graphic, elaborated by the Guardian Newspaper, some shifts in focus between SDGs and MDGs are illustrated (Figure 2).

Fig. 2 – Comparison between SDGs and MDGs, shift in focus



Source: Guardian Newspaper. Article "Sustainable Development Goals: ''Changing the World in 17 Steps''.

The MDGs address explicitly cities in Goal 7 "Ensure Environmental Sustainability". One of that goal's targets, "Achieve, by 2020, a significant improvement in the lives of at least 100 million slum dwellers," implicitly supposes that slum dwellers live in cities. This target is considered a success. In fact, the UN assert that "more than 200 million [slum dwellers] gained access to improved water sources, improved sanitation facilities, or durable or less crowded housing, thereby exceeding the MDG target" (www.citiscope.org).

The goal of SDGs (figure 3) explicitly referred to cities is the number 11 "make cities and human settlement inclusive, safe, resilient and sustainable" (table 4). It is supported by specific targets and indicators (currently under negotiation).

Fig. 3 – Sustainable Development Goals

Source: www.un.org

The urban-focused SDG (Goal 11) can be considered as an extension of the idea previously comes out from the Habitat Agenda. All of SDGs can be achieve in the space/city because all problems, as problems come from poverty or climate change, are concentrated in the city.

Urbanists from all countries encouraged including a specific goal related to urban areas. They argue the importance of a proper functioning of the cities for improving human condition. This goal stresses the key role that cities play in the world's future.

The 2030 Agenda recognizes the important role that cities play in the achievement of sustainable development introducing a specific city-focused goal. It recognized that cities are a string that connects all other goals together.

To achieve this goal we need a range of measures, including financial support, technologies and scientific know-how. We need multistakeholder partnerships, involving public and private sectors and civil society (that have to represent the "glue" of this process); this is the only way to achieve these ambitious goals.

Tab. 4 – Sustainable Development Goals – Goal 11 and its targets

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable
11.1 By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
11.2 By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons
11.3 By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage
11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations
11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management
11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities
11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to

disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels
11.c Support least developed countries, including through financial and technical assistance, in building sustainable and resilient buildings utilizing local materials

The economic, social and environmental dimensions of sustainable development are addressed at a global institutional level to achieve prosperity and peace, gender equality, health and equal opportunities for people. These objectives are extremely challenging, and the monitoring of goals achievement through appropriate indicators is a priority.

The Global Monitoring Framework adopted by the Statistical Commission (231 indicators) (United Nations, 2016b) shows that about one third of indicators has an urban component and so can be measured at local level (www.unhabitat.org).

The debate about how to measure the progress is still intense.

Every 169 target has its own set of metrics. Data could be gathered at city level, but there is no agreement yet on whether to do so. An agreement about the involvement of local authorities in gathering this information at all is still lacking.

It needs a better articulation of SDGs indicators to effectively implement the 2030 Agenda and monitor the related indicators that have an urban component.

1.3 United Nations Conference on Housing and Sustainable Urban Development - Habitat III

Habitat III (formally known as the United Nations Conference on Housing and Sustainable Urban Development) is a global summit that was held in Quito (Ecuador) on 17-20 October 2016. Thirty thousand people from 167 countries attended the conference.

Habitat III has been the third meeting in a series of UN Conferences on human settlements. These conferences were held at twenty-year intervals from each other:

the first one took place in Vancouver in 1976 (Habitat I), the second one in Istanbul in 1996 (Habitat II) and the last one in Quito in 2016 (Habitat III).

Habitat process is born by the need to face problems resulting from increasing urbanization. In fact, during the 1960s and early 1970s, urban population has grown considerably due to both stronger economic perspectives of cities and the extreme poverty of the rural areas.

At the same time, governments have become aware of the negative impacts related to this demographic trend (rapid and unplanned urbanization). Problems as urban slums and squatter settlements have produced a chaotic development and declining quality of life. All of these problems/issues related to rapid urbanization require new approaches, solutions and a common terminology to restore order to urbanization processes.

Until 1976 the unplanned urbanization was not considered an element able to generate poverty and inequity; in this year a global summit was announced in order to discuss about these issues (Vancouver Conference). This first UN Conference was attended by government representatives from around the world. It saw a large participation of civil society, too.

The outcome document of this Conference was the Vancouver Declaration on Human Settlements containing 64 recommendations for national-level actions (United Nation, 1976). This has led to the creation of the United Nations Centre for Human Settlements, from which later UN-Habitat came out.

Habitat I Conference was concentrated on housing supply (at a technical level) and it was mainly addressed to national governments, leaving out (from formal process) local-level authorities and civil society groups.

This restricted formal participation in the first Conference has been recognized as a strong limit. So, starting from this event, organizers have begun working to extend the dialogue and participation. In fact, the 1996 Conference (Istanbul Conference) was extended also to local government authorities, academics and other key civil society actors (organized in a committee).

The Istanbul Conference drew attention the Earth Summit in Rio de Janeiro (1992) that focused its attention on sustainable development. So, in Istanbul Conference sustainability issue became a priority to be integrated into UN-Habitat's scope, including the necessity to work towards sustainable urbanization.

The outcomes documents of Habitat II conference were: Istanbul Declaration on Human Settlements and the Habitat Agenda (United Nation, 1996a; 1996b). The latter was focused, in particular, on the necessity to provide adequate housing for everyone.

Starting from Habitat II, the notion of sustainability began to drive development, playing an increasingly central role in the international system and over 100 countries have adopted constitutional rights to adequate housing. In fact, as mentioned in paragraph 2, in 2001 the United Nations adopted the MDGs including, for example, a goal about the reduction of percentages of slum-dwellers.

The attention of the MDGs was focused on the poverty eradication and the necessity to ensure environmental sustainability (closely related to the Habitat Agenda).

These tenets have been constantly confirmed during the major United Nations meetings on sustainable development (for example the World Summit on Sustainable Development in 2002 and Rio+20 in 2012). These principles represent the starting point for considerations and discussions around the Post-2015 Development Agenda (as the 2012 report "Realizing the Future We Want For All").

Urban issues have begun to play an increasingly central role in the international development agendas. The trend that recognizes the central role of sustainability has influenced planning for Habitat III. The first signal is the change of the Conference's official name: from UN Conference on Human Settlements to UN Conference on Housing and Sustainable Urban Development.

Habitat III represents the most recent global effort to identify a shared vision for the sustainable future of cities. The core of the discussion during Habitat III Conference has been equity and sustainability, both economic and social and environmental.

Considering sustainable development issue related not only to natural resources and environmental issues, but also economic and social ones, the World Commission on

Environment and Development worked a lot to recognize the economic and social development as a part of an interconnected system of balance. This balance is one of the main goal of sustainable development broadly and of Habitat III Conference.

It is the first Habitat Conference that was held when the world population lived mainly in cities. It has represented a great opportunity to identify and discuss on strategies around urban-related complex issues.

The aim of Habitat III Conference has been to strengthen the global political commitment to the achievement of the sustainable development of cities and other human settlements, both rural and urban.

Habitat III has been a good opportunity for the international community for discussing about current urbanization trends (quality of life, environmental degradation, poverty, etc.). This event has been the first time in 20 years that the international community, led by national governments, took stock of the rapid urbanization trends and the impacts that they have on human development, environmental well-being, and civic and governance systems.

The outcome document of the conference is the New Urban Agenda; it defines the global urbanization strategy for the next two decades. The document should be seen as an extension of the 2030 Agenda for Sustainable Development, as Joan Clos (Secretary-General of the conference and Executive Director of the UN Human Settlements Programme, UN-Habitat) told participants at the closing session.

The formulation of the document is the result of a process during which a lot of official and semi-official events were held, from regional meetings to thematic meetings and “Urban Thinker Campus” (UN-Habitat, 2014), with the aim of gathering stakeholder inputs.

From August 2015 to February 2016 a group of 200 experts (“policy units”) prepared important recommendations (opened to public comments) addressed to the drafting and implementation of the New Urban Agenda.

The New Urban Agenda defines an urbanization model, a set of priorities and strategies that consider the evolving patterns of the new century. It will impact on

choices related to the development priorities and programmes financed by governments and broader system (i.e. World Bank).

The aim of the Agenda is to guide, for the next 20 years, the efforts around urbanization. It is addressed to a lot of actors: nation states, city and regional leaders, international development funders, United Nations programmes and civil society.

Unlike the November 2016 climate negotiations in Marrakesh (COP22) (United Nation, 2016c), the New Urban Agenda is not binding. It represents only a guide to a wide range of actors (as nation states, city and regional authorities, civil society, foundations, NGOs, academic researchers and U. N. Agencies).

There are several ideas that form the ideological base of the New Urban Agenda. Democratic development, respect for human rights, the relationship between environment and urbanization are only some of them.

Issues related to equity in the face of globalization, safety and security of everyone who lives in urban areas, of any gender and age, risk reduction and urban resilience play central roles.

The document is considered an important guide by all actors involved in field related to urban planning, transport and local-level governance. Urbanists and international practioners and scholars are interested in, too. Furthermore, the broader civil society (as environmentalists, sustainable agriculture proponents, legal advocates, labour and rights watchdogs, housing proponents, immigration workers, even historians and anthropologists, etc.) are interested in the New Urban Agenda.

The NUA is composed of two main sections:

- the first section is “Quito Declaration on Sustainable Cities and Human Settlements for All”. It is composed by 22 points on general principles and commitments;
- the second section is “Quito implementation plan for the New Urban Agenda”. The implementation plan, in turn, includes “The Transformative Commitments for Sustainable Urban Development” (56 points), “Effective Implementation” (76 points), “Follow-up and Review” (15 points) (United Nations, 2016a).

Tab. (table 5) here below synthesizes the structure of the Habitat III outcome document.

Tab. 5 – Structure of the New Urban Agenda (NUA)

QUITO DECLARATION ON SUSTAINABLE CITIES AND HUMAN SETTLEMENTS FOR ALL	
General principles	art. 1-10
Our shared vision	art. 11-13
Our principles and commitments	art. 14-15
Call for action	art. 16-22
QUITO IMPLEMENTATION PLAN FOR THE NEW URBAN AGENDA	
General principles	art. 23
Transformative commitments for sustainable urban development	
General principles	art. 24
Sustainable urban development for social inclusion and ending poverty	art. 25-42
Sustainable and Inclusive Urban Prosperity and Opportunities for All	art. 43-62
Environmentally sustainable and resilient urban development	art. 63-80
Effective implementation	
General principles	art. 81-84
Building the urban governance structure: establishing a supportive framework	art. 85-92
Planning and managing urban spatial development	art. 93-125
Means of implementation	art. 126-160
Follow-up and review	art. 161-175

The New Urban Agenda tries to create a "mutually reinforcing relationship between urbanization and development" (www.citiscope.org), aiming to make these two concepts as parallel driver for sustainable development.

The Agenda contains guidelines on a range of "enablers" able to make the relationship between urbanization and sustainable development stronger. These

"enablers" are: "development enablers" and "operational enablers" (www.citiscope.org). The first ones try to harness the multiple forces of urbanization to generate growth (as national urban policy, laws, institutions, governance systems, etc.).

The "operational enablers", instead, aim to support sustainable development. Their implementation allows better results in land use model, how a city is formed and how resources are managed.

The New Urban Agenda highlights three operational enablers: local fiscal systems, urban planning, and basic services and infrastructures.

The New Urban Agenda recognizes the necessity of a monitoring mechanism to track all of these issues, but details about it are yet pending (they will discuss during the next debate by the UN General Assembly in 2017-18.)

1.4 The need to move from principles to action

The increasing urbanization of cities triggers challenges to sustainable development; these challenges include, for example, social and economic exclusion, environmental degradation, inequalities, etc. At the same time, this increasing urbanization offers opportunities for economic growth, social and cultural development, and environmental protection. Both challenges and opportunities can be addressed through planning, finance, governance, management, etc.

The 2030 Agenda for Sustainable Development focuses on the need to move from principles to action and thus the tools to do it.

First of all, great knowledge production is necessary. The knowledge represents the feed of this process. It is necessary the improvement "in data collection, mapping, analysis and dissemination, and in promoting evidence-based governance, building on a shared knowledge" (2030 Agenda, § 159). To start this route depends on us (Gunter Pauli, 2014): first of all we need to start a "cultural revolution".

A better knowledge, awareness and interconnectivity have a key role. Community has an increasingly active role in development; for example, planners have to work in a synergistic way with communities.

This necessity to move from theory to practice is highlighted by the existing of a group of paragraphs related to the "means of implementation" § 126-160 (United Nations, 2015).

To increase urban productivity and so to achieve, for example, the goal 11 of Sustainable Development Goals, tools are required. Urban planning represents one tool to operationalize the principles.

The key role of urban planning is highlighted in 14-15-44-51-96 paragraphs of the 2030 Agenda. Here, the importance of urban planning to improve urban productivity is stressed. In particular, the integrated planning, as paragraph 94 introduces, aims "to balance short-term needs with long-term desired outcomes of a competitive economy, high quality of life and sustainable environment".

The transition towards a *new urban paradigm* (2030 Agenda, §15) readdresses, for example, the way to plan, to govern, to manage cities, "recognizing sustainable urban and territorial development as essential to the achievement of sustainable development and prosperity for all".

The above mentioned paragraphs highlight the role of national governments in the implementing "inclusive and effective urban policies and legislation for sustainable urban development. Integrated approaches to urban and territorial development are required, by implementing policies, strategies, capacity development and actions at all levels, based on fundamental drivers of change, including: developing and implementing urban policies including in local–national and multi-stakeholder partnerships and promoting cooperation among all levels of government; strengthening urban governance to enable social inclusion, sustained, inclusive and sustainable economic growth, and environmental protection; reinvigorating long-term and integrated urban and territorial planning and design in order to optimize the spatial dimension of the urban form and deliver the positive outcomes of

urbanization; supporting effective, innovative and sustainable financing frameworks and instruments" (2030 Agenda, §15).

The success of the urban transformation process depends on the ability to produce not only added income, but also social and human capital; this is closely tied to the intensity of the relationships activated.

The 2030 Agenda encourages "the implementation of sustainable urban and territorial planning, including city-region and metropolitan plans, to encourage synergies and interactions among urban areas of all sizes and their peri-urban and rural surroundings" (2030 Agenda, §96). It supports projects related to the development of sustainable regional infrastructure that stimulate sustainable economic productivity, promoting equitable growth of regions across the urban–rural continuum. To this end, Agenda 2030 "promoted urban–rural partnerships and inter-municipal cooperation mechanisms" (2030 Agenda, §96).

In this perspective, adequate evaluation tools are required. The 2030 Agenda dwells on this necessity. In fact, it highlights the central role of evaluation processes in order to achieve all goals. In particular 80, 94, 104, 115, 136, 138, 147, 158, 159, 161, 172 paragraphs deal with the evaluation tools.

They highlight the importance of medium-long term impact evaluation (2030 Agenda, §80) and stress the importance of improving the transparency of data (2030 Agenda, §104, 136, 138) to ensure equity and spatial integration. Monitoring and evaluating public policies is fundamental for sustainable urban development. The evaluation process is today based on ex-ante assessments. Instead, public policies need also ex-post assessments, based on the critical analysis of concrete experiences. In this way, we are able to gauge again the intervention policies and understand if we achieved our goal.

To strengthen data and statistical capacities is fundamental "to monitor progress achieved in the implementation of sustainable urban development policies and strategies, and to inform decision-making" (2030 Agenda, §158).

The 2030 Agenda refers also to the necessity of evidence-based assessment; impacts assessment is necessary in order to track the progress and ensure the Agenda's effective and implementation (2030 Agenda, §161, 172).
The 2030 Agenda refers to the necessity of implementing and systematically evaluating plans, while making efforts to leverage innovations in technology and to produce a better living environment.

Habitat III Conference represented a great opportunity to discuss the role of cities in sustainable development, how they need to be planned and managed to become drivers in this process. The Conference stresses the role of cities and human settlement to shape the implementation of SDGs in an increasingly urbanized world.
In the first part of NUA (United Nation, 2016a) vision, principles and commitments are explained. *Cities and human settlements* must be *for all* (point 11). It needs to provide *adequate housing* (point 13a) to everyone. This section highlights the necessity of *accessible urban mobility* (point 13a), *gender equality* (point 13c) and *sustainable consumption* (points 13h, 14c). *Long-term, integrated urban and territorial planning and design*, and *sustainable financing frameworks* and the *cooperation of all levels of government*, with the *participation of civil society and stakeholders* (point 15) are fundamental principles to achieve sustainability goals.
The Transformative Commitments for Sustainable Urban Development are based on *social, economic and environmental dimensions*, which are considered as *integrated and indivisible* (point 24).
This section promotes social inclusion and the contribution to ending poverty (points 25-42). The role of public spaces and cultural and natural heritage as sustainable leverage is recognized.
The access to *knowledge, skills, income-earning opportunities and educational facilities*, and the *promotion of investments, innovations and entrepreneurship* are part of the scope to achieve sustainable and inclusive urban prosperity and opportunities for all and to increase economic productivity (points 43-62).

Climate change and its related risks, *unsustainable consumption*, *loss of biodiversity*, *slum upgrading*, *resource efficiency* and the *social and ecological function of land* (*including coastal areas that support cities and human settlements*) are some of the topics covered in the Environmentally Sustainable and Resilient Urban Development section (points 63-80).

The effective implementation section recognizes the necessity of an enabling policy framework (at national, sub-national and local levels). It is stressed the importance of participatory processes and cooperation systems in order to implement the NUA (points 81-84).

It needs a supportive framework for good governance at all levels (points 85-92).

The Planning and Managing Urban Spatial Development section (points 93-125) deals with the necessity to implement integrated planning in order to achieve a *balance short-term needs with long-term desired outcomes*. In this section some issues as *food security*, the *interrelationships of cities and territories*, *mixed social and economic uses, quality public spaces*, *accessible and sustainable urban mobility*, *water management and climate risk* are highlighed. *Culture* should be included as a priority component of urban plans and strategies (points 93-125)

In the Means of Implementation section (points 126-160) the necessity of a variety of actors and means to implement the complex agenda is recognized. It is required a wide range of financial, planning and evaluation tools. Capacity development and mobilization of financial resources (point 126), the necessity to generate evidence-based and practical guidance for implementation (point 128), property value assessment promoting best practices to capture the increase in land and property value due to urban development processes and investments (point 137), impact assessment of investments and projects (point 138), the capacity to formulate, implement, enhance, manage, monitor and evaluate public policies for sustainable urban development (point 147) are part of the main means.

In the implementation of the NUA participatory practices play a key role. The “bottom-up” approaches can trigger positive change and their success lies in the participatory and inclusive urban development.

The section about Means of Implementation highlights the need of *digital platforms and tools, including geospatial information systems,* geospatial information systems, data collection, mapping, analysis and dissemination to promote evidence-based evaluation and governance.

It is important to monitor progress achieved through urban policies and strategies and to inform decision-making about the results achieved.

So, in the last section, Follow-up section (points 161-175), it is recognized the absolute nececessity of *track progress, assess impact, ensure effective and timely implementation, accountability and transparency*. *Quantitative and qualitative analysis, perioidical assessments* should support the progress tracking.

2. URBAN PRODUCTIVITY AND PORT CITIES

Source: www.citiesandports2016.aivp.org

2.1 **Introduction: port-city system**

All changes that are characterizing our world (demographic changes, i.e. population growth - structural changes, i.e. globalization - and environmental changes, i.e. climate change, pollution, etc.) and all challenges that cities are facing today (related to economic, social and environmental crisis) are evident in port cities because they are characterized by a complex landscape, a particular complexity.

The increasing urbanization today is concentrated along the coast areas; in fact, almost half a billion peoples live there, increasing coast vulnerability to storm surges and sea level rise (www.worldbank.org).

Coasts are the place where there is the highest level of vulnerability. So they represent a good observation point to understand the dynamics of ongoing urban transformation.

Port cities are very different from each other: large ports of international/national importance, ports of local interest, river ports, military ports, etc. In each of them the coast continuously changes in order to adapt itself to needs of the society in a dynamic perspective.

Cities of XXI are complex and stratified; they are become a system of relationships, a complex of hybridization processes (Fusco Girard, 2014a), where past and present coexist, cultural heritage combines with new forms of fruition and development.

Especially due to the economic crisis, lacking of resource and management difficulties, a lot of port areas are in a decline or abandoned state. Sometimes, these areas represent a barrier between city and sea, producing negative impacts not only on the environmental system, but also on the economic and cultural one. They represent an obstacle for the territorial management but, at the same time, they can represent the starting point of urban regeneration.

Ports represent an important asset because they serve as connection among many territories. Ports and theirs cities have developed hand in hand for many centuries, until the industrial revolution. This period, because of globalisation and the rapid development of containerisation, represented a break point of relationship/synergy between port and city.

Today, relationship between port and city is become a central issue in the sustainable development framework. From one hand, there is the necessity to revive and develop ports; to the other hand, there is the will to use their potential as driver for overall city regeneration.

In port cities strong development potential and contradictions take place; in fact they are the place where the economic wealth is produced but, contemporaneously, negative environmental and social impacts are localized. They are the place where competitiveness, human capital and global appeal, population and migration processes are mainly concentrated.

At the same time, port cities offer a lot of opportunity for economic productivity, social cohesion and ecological resilience. The key issue is to transform the contradictions and problems into opportunities through a good government, management and planning.

Port and port-city system can be able to produce multidimensional benefits and mitigate negative impacts due to development.

An action model to develop ports and port-city systems is through maritime clusters. They represent a key to maritime domain and can produce add value for overall surrounding city. These clusters in general put together port and logistics, shipping and maritime services, etc.

Furthermore, port-industrial development can create synergistic relationship with local economy. Circular economy, in particular, represents a productive model in this perspective.

Port-related waterfront regeneration, instead, is a model which transforms former industrial port in urban places, through a mix of functions that are able to produce multidimensional benefits (economic, but also social and environmental).

There are a lot of good practices of well-known city regeneration projects, as Valparaiso, Rhodes, Oporto, Liverpool (Genovese, 2012), Baltimore, etc. which show that regeneration of coastal cities starts just from the ports and waterfront regeneration.

The waterfront, unlike the coastline, cannot be considered a simple demarcation between city (land) and sea (water); it is a portion of land characterized by a strong relationship with the sea that man, during the centuries, has designed and shaped, building urban settlements and infrastructures.

Although its complexity, the waterfront importance is evident in terms of resources and potentialities. It represents the interaction space between city and sea, a boundary line between two different areas of the same urban area, the space of the relationships with the historic city and a landscape of great visibility. It is an attractive place in terms of businesses, activities, etc.

Today urban waterfront is characterized by local identity, but also globalization phenomena and intertwined urban and port flows (of goods and people), which have to be well organized and managed in order to create a unique entity.

Waterfront regeneration is a current topic that concerns big cities, but also small and medium size urban centres.

Waterfront regeneration is, in more and more cases, the starting point for regeneration of the city itself. It represents an opportunity for mending urban

territory, where water can play a central role. It represents a key topic in city transformation and involves themes related to the economic and social development, resources saving, and cultural heritage conservation.

In particular, port areas are focal points for port cities (also thanks to their central urban location): they are the area for trade exchange (import and export), for localization of industries and businesses and a source of attraction for tourism and cultural exchange. But, at the same time, they are also the place where many differences and conflicts are localized (i.e. they are the place of conflicts between economy and ecology). Some of them are related to negative environmental impacts caused by the high level of energy consumption, air and water pollution, or natural resource consumption. Other conflicts are due to the effort to conserve cultural landscape satisfying needs of economic development at the same time.

Port areas are the places where conflicts can be transformed into synergies through innovative approaches of governance, planning, management, etc.

In this perspective the port is not considered only as a transport hub, but also as a complex system of economic activities and relationships that have impacts on the entire city (Bruttomesso, 2007).

Port area is characterized by a particular landscape, which is the product of a complex system in which socio-cultural, economic and ecological systems are interconnected. Port area is the place of transformation but it is also the place of cultural heritage, identity and memorial conservation. It often represents the ancient city boundaries and, in many cases, it is recognized as UNESCO World Heritage Site (Naples, Venice, Liverpool, etc.).

In the historic cities it is important to create synergies between waterfront and city, generating symbiosis between waterfront development and cultural heritage/landscape conservation (Fusco Girard, 2013).

The “reconquest” of the relationship with sea and with cultural landscape, the port development, the enhancement of accessibility to the coastal area can be considered strategic actions to achieve the economic, environmental, social, cultural development of the entire city.

The international framework around sustainable development and urban policies pave the way for joint developing of ports and cities and new urban solutions.

Most of the Sustainable Development Goals (SDGs) can be achieved in the space, in the cities. All the problems, for example problems related to climate change, energy, water, food or wellbeing are localized in the cities and so all the challenges can be faced in our cities and in their landscape.

The 2030 Agenda fort Sustainable Development (United Nation, 2015), recognizing the negative impact of climate change on coastal area (sea level rise, ocean acidification) (§14), highlights in the goal 14 ("Conserve and sustainably use the oceans, seas and marine resources for Sustainable development") the necessity to conserve at least 10 per cent of coastal and marine areas through national and international law and scientific information (target 14.5)

Furthermore, in order to avoid negative impacts, it is necessary to sustainably manage and protect coastal ecosystems, strengthening their resilience (14.2).

In the Implementation Plan for the New Urban Agenda there are some explicit reference to coastal areas and their contribution to the implementation (United Nation, 2016a). In particular, the points referred to environmentally sustainable and resilient urban development (NUA, points 63-80 of the Transformative commitments for sustainable urban development section) highlight the vulnerability of coastal areas to the *adverse impacts of climate change and other natural and human-made hazards* (i.e. sea-level rise).

It is necessary to integrate *appropriate measures into sustainable urban and territorial planning and development*, paying particular attention to coastal area, emphasizing their important role as *ecosystems' providers of significant resources for transport, food security, economic prosperity, ecosystem services and resilience* (NUA, point 68)

There is also a particular reference to the promotion of a better waste management, reducing waste generation. It is important to reduce marine pollution through improved waste management in coastal areas (NUA, point 74).

2.2 Waterfront regeneration

The concept of “boundary” is changed, losing its own significance: urban system is no longer a juxtaposition of functional spaces, but it is become intertwined relational spaces that are in relationship with each other through circular processes. The project of the interface land-water aims to generate relationships through flexible strategies, triggering virtuous circle.

In order to regenerate the waterfront, it needs to take into account some key elements. These elements are, for example, summarized in the “10 Principles for a Sustainable Development of Urban Waterfront Areas”. They are developed by Cities on Water in collaboration with Wasserstadt GmbH, Berlin, during the international seminars, and approved in the context of the initiatives for the Global Conference on the Urban Future (URBAN 21) held in Berlin in July 2000 and in the course of the EXPO 2000 World Exhibition. These principles are:

Principle 1 - Secure the quality of water and the environment. The quality of water in the system of streams, rivers, canals, lakes, bays and the sea is a prerequisite for all waterfront developments. The municipalities are responsible for the sustainable recovery of derelict banks and contaminated water.

Principle 2 - Waterfronts are part of the existing urban fabric. New waterfronts should be conceived as an integral part of the existing city and contribute to its vitality. Water is a part of the urban landscape and should be utilised for specific functions such as waterborne transport, entertainment and culture.

Principle 3 - The historic identity gives character. Collective heritage of water and city, of events, landmarks and nature should be utilised to give the waterfront redevelopment character and meaning. The preservation of the industrial past is an integral element of sustainable redevelopment.

Principle 4 - Mixed use is a priority. Waterfronts should celebrate the water by offering a diversity of cultural, commercial and housing uses. Those that require access to water should have priority. Housing neighbourhoods should be mixed both functionally and socially.

Principle 5 - Public access is a prerequisite. Waterfronts should be both physically and visually accessible for locals and tourists of all ages and income. Public spaces should be constructed in high quality to allow intensive use.

Principle 6 - Planning in public private partnerships speeds the process. New waterfront developments should be planned in public private partnerships. Public authorities must guarantee the quality of the design, supply infrastructure, and generate both a social equilibrium. Private developers should be involved from the start to insure knowledge of the markets and to speed the development. The coordinators of complex waterfront developments must guarantee their long-term economic, social and ecological success.

Principle 7 - Public participation is an element of sustainability. Cities should benefit from sustainable waterfront development not only in ecological and economical terms but also socially. The community should be informed and involved in discussions continuously from the start.

Principle 8 - Waterfronts are long-term projects. Waterfronts need to be redeveloped step by step so the entire city can benefit from their potentials. They are a challenge for more than one generation and need a variety of characters both in architecture, public space and art. Public administration must give impulses on a political level to ensure that the objectives are realised independently of economic cycles or short-term interests.

Principle 9 - Re-vitalisation is an ongoing process. All master planning must be based on the detailed analysis of the principle functions and meanings the waterfront concerned. Plans should be flexible, adapt to change and incorporate all relevant disciplines. To encourage a system of sustainable growth, the management and operation of waterfronts during the day and at night must have equal priority to building them.

Principle 10 - Waterfronts profit from international networking. The re-development of waterfronts is a highly complex task that involves professionals of many disciplines. The exchange of knowledge in an international network between contacts involved in

waterfronts on different levels offers both individual support and information about the most important projects completed or underway

One issue related to port-city ecosystem regeneration, to plan port cities, is referred to the spatial organization. The waterfront can provide land solutions shared between port and city. It needs to find the right balance between spatial and functional mix able to transform, in a productive way, the city-port interface and also the entire territory. It calls for solutions able to combine optimization of uses, efficiency and less environmental impact.

The different functions can be distributed both in horizontal, i.e. Amsterdam Port (Netherlands), and vertical, i.e. Marseille Port (France) (AIVP, 2015). The latter is not too use, but it is a good solution when there is no enough space. This functional mix makes port area more attractive both for businesses and for other stakeholders and community.

Other experiences show that another solution can be “to move the city towards the water”, moving facilities on the water (floating restaurants, etc.). This solution, integrating port and city, represents an opportunity to preserve limited land space (AIVP, 2015). For example in Rotterdam (Netherlands) there are three “floating pavilions” functioning as exposition and reception area. They are become a symbol of the city, contributing to the identity of the place.

Temporary uses are a good strategy that allows the project to evolve over time, adapting to the city and port needs. The flexibility represents an opportunity, as in the case of Seville port (France), which makes cites more attractive and dynamic.

The functional mix contributes to the creation of a sustainable city-port. It is related to the necessity of new ways to plan the city with the port. It requires new collaborative approach, monitoring tools, community involvement.

“We need to plan incompletely. Since we don’t know exactly what the future economy of the port city will be, we will need to plan for uncertain functions”. In this way Peter Hall (a Canadian researcher) explains the necessity to make plans flexible. Urban planning should be “incomplete” (Hall, 2016). Space between port and city should be permanently unfinished. So it can adapt to dynamics and provide space for

experimenting. In this way, spatial planning can support the innovation required in port cities.

Accessibility should be optimized in a waterfront regeneration project, improving the connection between port and city. A good mobility plan (for goods and people) improves port competitiveness and contributes to reduce environmental impacts. A good mobility plan and alternative means of transportation (bicycle, shared transportation, water taxi, etc.) reduce road congestion in city/port territories, contributing to the environmental protection. For example, in Tangiers (Morocco) a cable car system is projected in order to connect the downtown area, the marinas, the new fishing port and the Kasbah (with a capacity of 2800 passengers per hour).

It is important to choose carefully the location of passenger terminals: it has to be localized in a place provided with the best access to the city center. The quality of connection between passenger terminal and the city center is decisive to promote tourism and generate added values. The city and port can be linked also through promenades having the role of connection and, at the same time, representing a means to revitalise spaces, introducing new visual perspectives too. In Malaga (Spain) for example, the topic of the links between the historic center and old port assumes a central role in the waterfront project: a promenade linking city center with the sea and high-quality public spaces are designed (Tuğçe and Yakup 2016).

Port cities have a particular identity that distinguishes them from other cities. This identity has to be conserve/preserve, integrating past and present in a synergistic way. Ports have also a particular heritage that links them to their history. The better solution for ports regeneration is to renovate existing architectural and port heritage. This is demonstrated comparing costs of renovating with costs of building entirely new constructions (AIVP, 2015). Adaptive re-use of cultural heritage can produce, in a circular perspective, a lot of multidimensional benefits (i.e. reducing land consumption) (Angrisano et al., 2017), both economic and ecological and social benefits.

In port areas we can find many answers to the climate change and rising sea level problems. Here we can find innovative solutions and measure able to reduce the

environmental footprint and optimize environmental performance. Planning the city with the port requires necessarily environmental considerations. It is fundamental, before practical steps, to identify and assess environmental impacts of ports, especially in city-port area interface (for example in Valencia, Spain, a carbon footprint measuring tool is adopted in order to draft the action plan).

Port and port activities are the main sources of negative environmental impacts and air pollution. It needs to identify innovative solutions to face climate change and improve energy performance of ports (and cities). A solution can be taken from the industrial ecology that, turning linear processes in circular ones, is able to optimize the resource cycles (Mat, 2014; Mat et al., 2014). In Rotterdam (Netherlands), for example, a pipeline is designed to collect the high-temperature industrial steam in order to produce heating for 20,000 homes and a hospital.

Other projects (23 projects) based on the industrial ecology model are drafted in Kalundborg (Denmark). They are based on the principle of circular economy related to industrial waste, re-using it as raw material for other industries or for power generation (Vadstrup Holm, 2013).

Lessons learnt from industrial ecology (and in general circular processes) can be transferred to the overall city organization, increasing productivity (in terms of economic, social, environmental dimension).

2.3 Good practices

Here below some best practices (fig. 4) of port and waterfront regeneration are described. These concrete experiences highlight the benefits produced by the regeneration of the relationship between city and sea. It is not a problem related to the homogeneity, but to the diversity, heterogeneity. It referred to the interconnections, synergies and circular processes (as in the chapter 4 will be explained).

Fig. 4 – Map of the analysed good practices

2.3.1 Baltimore

United States, Maryland

Project area: 97 hectares

Fig. 5 – Port of Baltimore

Source: Baltimore Inner harbour 2.0 Report

Baltimore is the largest city in the U.S. state of Maryland.

Baltimore Harbor allows Baltimore City transforming from a small industrial town to a touristic destination.

After a rich past characterized by industrial and trade activities, in the late 1950s, a plan to save downtown from a decline due to the population shifts to the suburbs was prepared. It included 240 hectares around the port.

In 1976 the International Tall Ships sailing into the harbour attracted thousands of tourists. In 1980 Harborplace and the National Aquarium opened, starting the transformation and re-development of the city.

Today, tourism sector represents the most source of employment for the city; tourism industry continues to grow.

Recently, new mixed-use neighborhoods have grown along the Waterfront providing restaurants, movie theaters, hotels, and luxury condominiums, etc.

Baltimore's Inner Harbor project has the aim to transform the port from a declining industrial area into a destination for tourists and residents. It is a good example of collaborative planning process, too.

The masterplan, in the wake of the previous dating back to 1970, offers new ideas related to the development of the port area: integrating green infrastructure systems, creating clear thresholds and entry points to the harbour, developing new civic spaces and pedestrian connections within the public realm, identifying new destinations and programs, balancing the need for service and parking, providing a flexible framework which can accommodate changes in priorities, timing, and funding (AA.VV., 2013).

Data presented in the 2015 report (AA.VV., 2015a) about benefits produced by the project demonstrate the success of the project. It produced a lot of benefits, both economic and social and environmental ones. It was able, in 2013 alone, to attract over 14 million people who visited, shopped, dined and enjoyed the Inner Harbour. In 2015 the waterfront hosted 41 private events, 39 public events, 19 running events, 18 filmings, 9 events series. The visibility of the city significantly increased, receiving 664 million media impressions in 2015.

Waterfront attracted new businesses, producing an increase in commercial square footage of 37%. Between the years 2000-2011 new job opportunities at the waterfront grew by 16%. In 2012, 3,000 employees worked at Inner Harbor Businesses. Inner Harbor tourism and business activity accounts for $102 million in annual tax revenue to the City and State and generated $790 million in Employee Compensation.

Commercial property value and property taxes jumped, as assessments rose by 50%. The residential demand increased by 49%.

There was a population boom in the Inner Harbor neighbourhood: growing well over 100% during the past decade (mellennials residing in waterfront in neighbourhoods increased over 56%). Waterfront neighbourhoods saw a 40% increase in number of the new-borns and toddlers living by the waterfront.

The port regeneration produced also environmental benefits; for example there are 1,673 homes powered by 224 tons of trash collected by the Water Wheel (224 tons of trash removed from the harbour) (AA.VV., 2015a).

The Inner Harbor represents a source of identity for the city and a primary reason for people visiting in Baltimore. In fact, only in 2012 the tourism sector generated $43.3 million to Baltimore City and $58.7 million to the State of Maryland. 60% of tourists to Baltimore visit the Inner Harbor. In 2012, 23.3 million of people visited Baltimore and 14 million visited the Inner Harbor.

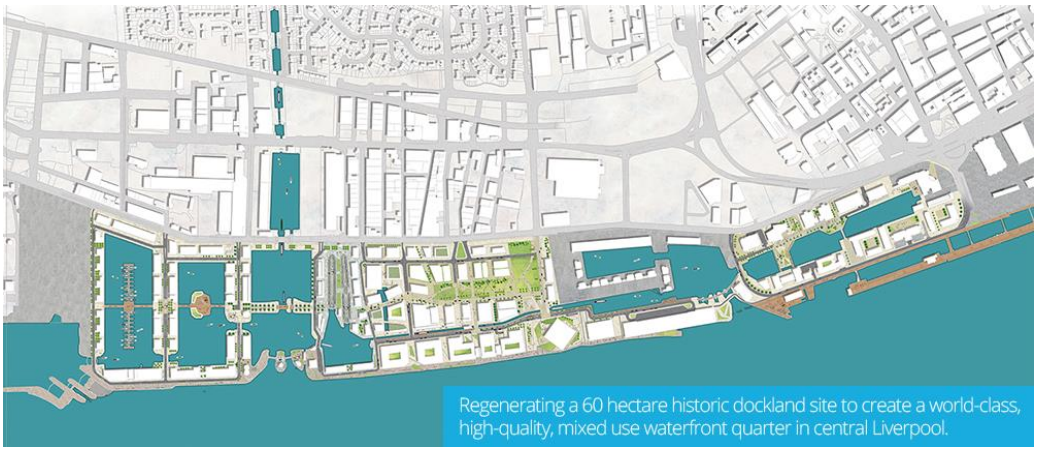
Also residents go to the Inner Harbor for many reasons: from enjoying the waterfront to visiting National Aquarium and Maryland Science Center, from attending events to just walking along the promenade.

2.3.2 Liverpool

Europe, United Kingdom

Project area: 60 hectares

Fig. 6 – Liverpool Waterfront



Source: www.liverpoolwaters.co.uk

Liverpool Waters (www.liverpoolwaters.co.uk) is a project which aims at the regeneration of 60 hectares historic dockland site to create a world-class, high-quality, mixed-use waterfront quarter in Liverpool.

The scale of the development and its very ambitious long-term visions (30-years vision) make Liverpool Waters one of the most important waterfront regeneration projects in Europe. The long-term planning for Liverpool Waters development was approved in September 2013.

The site is 60-hectares large and extends 2km along the waterfront and part of the site interested by the project is situated within the Liverpool Mercantile City World Heritage Site (WHS 2004); the rest is within the WHS buffer zone. 42% of the Liverpool Waters site is within the World Heritage Site.

World Heritage Site has preserved and enhanced by Liverpool Waters proposal, through a symbiotic relation between port and city. The waterfront quarter is conceived and designed as an extension of the city center with new buildings and public spaces. Heritage assets are included in a restoration programme including the former operational buildings, the dock boundary wall, historic surfacing and quayside artefacts. Integrating the site's cultural heritage with the development, the project creates a unique sense of place (De Figueiredo, 2011).

The project aims to create a world-class, high-quality, mixed-use waterfront quarter in central Liverpool. It aims accommodate new and existing residents, to increase the number of visitors and attract national and international businesses, significantly strengthening, at the same time, Liverpool's strong identity.

The project includes 9,000 apartments, two parks, hundreds of offices, hotels, bars and a new cruise terminal and 20,000 jobs (www.liverpoolwaters.co.uk).

Liverpool waterfront is an attractive place for businesses. In fact it provides 315,000 sqm of business space (in 88 plots).

There are 46,000 sqm of restaurant, bars and cafes, 33,000 sqm for leisure activities and 27,000 sqm designated to retail, (53,000 sqm) of floor space has been designated to hotel and conference facilities (Over 1,400 beds).

During the 2015-2016 financial year the jobs target of 1,100 has been exceeded, generating a total of 1,131 jobs. These jobs result from 41 successful projects that are completed.

The investment by the private sector (£90,801,240) is a considerable increase compared to the previous financial year's (£78,125,189): more than 122% on the year-end target (£40,000,000).

2.3.3 Dundee

Europe, United Kingdom, Scotland

Project area: 240 hectares

Fig. 7 – Dundee Waterfront

Source: www.dundeewaterfront.com

- £1 billion investment
- 7000 new jobs (expected)
- 240 hectares (8Km along the River Tay)
- Scotland's first sustainable community

Dundee is a Scotland city along the River Tay. In December 2014 Dundee is recognized by UNESCO as City of Design; it is the only UK city of design which joined their Creative Cities Network.

It is well connected with the other Scotland cities (90% of Scotland's population live within a radius of 90 minutes by car) (AA.VV, 2015b).

It is a young, educated and cosmopolitan city (35,000 students live in Dundee) due to its leadership in the academia (sciences research, art and design, digital games, etc.)

The aim of Dundee waterfront regeneration (30 year masterplan, 2001- 2031) is to make Dundee an attractive city for visitors and businesses enhancing its physical, economic and cultural assets. The waterfront regeneration is a long-term project that aims to create a new central district able to reconnect the city center with the waterfront (it is the 3rd most active regeneration project in UK).

The investment is of over £1 billion. Scottish Enterprise, Dundee City Council (www.gov.uk) has invested a wide amount of public funding to launch this project. About half of the investment has already been committed (first £300 million come from various private and public bodies).

The impacts of waterfront regeneration are considerable and set to continue. It may create up to 9,000 new jobs (prevision).

The success of the waterfront regeneration project is due to the strong partnerships and good communication among institutions, council and businesses, producing a close and informed working group that works to make Dundee a leader waterfront destination.

The waterfront development project covers five different development sites: Riverside – the Park, Seabraes – the Brae, The Central Waterfront – the Front, City Quay – the Quay, Dundee Port – the Port, Riverside – The Park.

Even though the project is today at its half-way stage, it is already having positive impacts on the city's economy, providing necessary capital to support the continuation of the project.

The building of the Victoria & Albert Museum (a £45m project) represents a catalyst that is the key element of the project able to trigger all other development. The V&A proposal has led, for example, to two major luxury hotel developments.

The aim of this museum is to attract visitors through touring exhibition, and thus giving them a reason to come back again to Dundee.

In order to attract always this number of visitors (or more) it is necessary to maintain high quality of exhibition and be renewed regularly. It requires a strong cooperation

among the main actors (universities, council, the V&A and the private and public sectors). In this way it triggers a "virtuous arc of prosperity: more tourists means more leisure and retail outlets. More outlets mean a better feel. A better feel means a more attractive place to live and work and so on" (www.scottishpolicynow.co.uk):

The five distinct different sites involved in the development project are:

- Central Waterfront (Residential, Office, and Leisure)
- City Quay (Residential, Retail, Marina)
- Seabraes (Digital Media and Creative Industries)
- The Port (Renewables Manufacturing and Processing)
- Riverside (Green Space and Leisure)

Seabraes – the Brae:

- Focus: Digital media and creative industries
- Investment £115 million
- Development area 4 hectares
- Job creation 1300

Seabraes is close to the Victoria & Albert Museum of Design Dundee City Council site, University of Dundee, Duncan of Jordanstone College of Art and Design, Dundee Contemporary Arts and the University of Abertay Dundee. In this zone there is also the award winning Dundee Science Centre.

Dundee is well-known for its expertise in digital media and creative industries field and Seabraes site represents a hub for digital media and cultural industries.

These sectors employ 350 businesses and 3300 people, generating an annual turnover more than £185 million.

The Central Waterfront – the Front:

- Focus: City centre businesses, financial sector and leisure
- Investment £513 million
- Development area 5.5 hectares
- Job creation 4800

The Central Waterfront is the core of the project. Here the project concerned mainly the demolition of bridge ramps, roads and buildings that represented a barrier between waterfront and city centre.

This zone will provide with iron street pattern, green spaces and boulevards connecting the city with the waterfront. Here V&A Museum of Design Dundee will be built; it represents the only design museum outside of London and it should attract about 275,000 visitors per year.

City Quay – the Quay:

- Focus: Offices, leisure, residential, retail, marina
- Investment £204 million
- Development area 10.5 hectares
- Job creation 1110

City Quay is to the east of the Central Waterfront zone, occupying 12.5 hectares.

Here, thanks to the waterfront regeneration project, 750 new homes and apartments (www.dundeewaterfront.com) and more than 20,000 square metres of commercial space, including almost 10,000 square metres of modern office space have been built.

Further investments include the supply of services for supporting the adjacent Dundee Port activities, hotels, residential accommodations and the creation of a marina, situated in a former dock.

Dundee Port | The Port:

- Focus: Renewable technology industries
- Investment £92 million
- Development area 25 hectares
- Job creation 300

The Dundee Port is the largest economic generators in the city (AA.VV., 2015b). It has a strategic location for marine and renewables. It is able to handle a wide range of products (agricultural, forest, bulk). 250,000 tonnes of agricultural products move through the port annually, making this port the Scotland's main agricultural hub.

It provides also repair and maintenance of drilling rigs and support vessels for the North Sea oil and gas industry.

The port supply is very wide. It provide a lot of facilities: Storage areas, Warehousing, 150,000 tonnes of dedicated cereal shed storage capability, Deepwater berths, Heavy lift quaysides, 25 hectares of Development land, 24 hour access, Six working berths, 1600m of quayside.

Riverside:

- Focus: Greenspace, Sports, Leisure Uses and Airport
- Investment: £1.5 Million
- Development area 35 hectares

The Riverside zone is the main road, rail and air gateway that connects central Scotland to Dundee. Here Dundee Airport is located. There are some proposal to accommodate here a rail stop and parking in order to improve waterfront accessibility.

It is a former landfill site transformed in a nature park along the River Tay. This site provides recreation and sporting services.

2.3.4 Hafencity

Europe, Germany

Project area: 157 hectares

Fig. 8 – Hafencity port area

Source: www.hafencity.com

Hafen City is located in Hamburg (Germany), on the river Elbe. It is the former port site in the heart of Hamburg and is government owed. It is located on an area of about 157 hectares and the waterfront is 10 kilometres long.

The northwestern bank of the river Elbe (unlike south bank) has no longer port functions until 1997 and so it is regenerated and used for urban use HafenCity.

Its development management is entrusted to a state-owned development corporation (HafenCity Hamburg GmbH, consisting of the City Mayor and members of the city senate).

The masterplan and site preparation is done by HafenCity Hamburg GmbH and the private sector was involved only at the end of the process for specific developments.

The project has the potential to become an extension of the inner city thanks to its proximity to the central area. Hamburg inner city will be expanded by 40% thanks to HafenCity. It is composed by 12 quarters and it will host 10000-12000 inhabitants (Erkök, 2009; Hans, 2008).

Starting from 1997, the city of Hamburg decided to reuse this area consistent with a new vision to establish a creative city. In 2000 the masterplan was approved with the aim to create a "close-grained and diverse mix of uses". It included housing with a range of different prices, office spaces, retail and public spaces.

The masterplan was revised in 2010 and, after a public consultation, the previous target of 1.5 million sqm of GFA has been increased to 2.32 million, increasing density.

In spite of the financial crisis of recent years, the project is going on successfully.

Currently there are 67 projects planned, under construction or already completed and more than 700 architects are involved in building construction.

Sustainability plays a key role in the development project. New rail lines and station are designed, more 6000 homes, more than 45,000 jobs and 28 hectares of public parks will be provided. 20% of site is dedicated to public open space and there is a 10 km of quayside promenades (Appleton, 2005; Timur, 2013).

The project will include: 700,000 sqm of living spaces, 1.1 million sqm of office space, 215,000 sqm of commercial and public services (i.e. retail, exhibition space), 310,000 sqm for education, culture, hotels, leisure, etc.

The area includes 47,000 sqm of residence, 124,000 sqm of offices, 53,000 sqm appointed to retail sector, 28,000 sqm of hotels, 6,000 sqm for gastronomy, 14,000 sqm of science center and 3,000 sqm appointed to cruise ship terminal.

In 2014 over 2,000 people lived in HafenCity and around 10,000 people worked there.

There are companies that employ over 1,000 persons.

It is encouraged pedestrian ways rather vehicle ones and pedestrian ways (around 70%) are separated from the streets. There are also bicycle paths (Hans, 2008).

All activities and development process are supervised by HafenCity Hamburg GmbH (chaired by the mayor and members of the city senate). The private sector is responsible only for construction of single lots.

The private investment is about 8.5 billion euros, while the public investment is around 2.4 billion euros (1.5 billion euros of them has been financed through land sales around HafenCity).

The project has generally been appreciated, but some community groups made some critical reflections, disapproving for example the selling of community land to the highest bidder and the high level of investment in HafenCity to the detriment of other areas of the city (Brodowski et al, 2011).

The sustainability principles are at the base of all project choices (eco-friendly building materials, etc.). The sustainable use of energy resources, public goods, environmentally friendly building materials and other attention to sustainability principles, lead HafenCity to a reduction of CO2 emissions by 27%.

The identity of HafenCity is not perceived only through physical and material elements (buildings are almost all new), but also through uses, people and their activities. This makes HafenCity characterized by specific atmospheres and cultures and not a result of global urbanization.

Relating to the physical aspect, the area is characterized by an architectural conservatism. In fact, for example, all new structures are in harmony with existing buildings, respecting their height and some of them are apogees.

The Elbphilharmonie plays an important role in the local identity creation. It is a concert venue that recalls musical and cultural tradition of the Hamburg city.

2.3.5 Toronto

Canada

Project area: 800 hectares

Fig. 9 – Toronto waterfront

Source: www1.toronto.ca

Toronto is the most populous city in Canada. Its waterfront includes 2,000 acres (800 hectares) of underused industrial land and open space.

The waterfront revitalization is a multi-billion dollar long term plan to improve environment, quality of life and economic activity. It is one of the most stimulating urban renewal projects in Canada. It is managed by the City's Waterfront Secretariat that works with the Waterfront Revitalization Corporation (TWCR), created in 2000 in order to lead and oversee the waterfront renewal.

The area is divided into three zones: West Don Lands, East Bayfront and the Port Lands.

The Central Waterfront Plan is based on four basic principles: to take away barriers; to build Waterfront Parks and public spaces; to promote green environment; to create diverse new communities.

The main objectives of the project are: to enhance the economic, social and cultural value of waterfront area; to make area (through fiscally and environmentally responsible actions) accessible and active for living, working and recreation; to ensure

the waterfront development in a financially self-sustaining manner; to promote the private sector involvement in the waterfront area development.

The Business and Development Plan is related to 20-25 years. The Business Plans considers $500 million cash contribution from each government and the transfer of public lands to Waterfront Toronto (that is the TWRC) and other public incentives in order to facilitate the development.

Toronto's new waterfront aims to provide the city with promenades, spaces for public concerts, festivals and marketplaces, new public squares and a network of parks and natural heritage areas. The renewal project represents a great opportunity for the city in terms of employment, revenues, new construction, tourism, cultural and economic development.

The initial investment from federal, provincial and municipal governments ($1.5 billion) has triggered considerable public investments in infrastructure (roads, parks, etc.) and $2.5 billion in new development. To 2013, the project produced $3.2 billion in economic output and 622 million in revenues for Canadian economy.

At the end of the project, 5 million square feet of commercial area and 30,000 residential accommodations, including affordable residences, are expected.

New cultural facilities, parks, public spaces, community services are planned to support the city. The waterfront renewal aims also to increase the number of visitors.

To date, the project has generated 16,200 full-time years of employment and 40,000 permanent jobs are expected.

West Don Lands area (largely owned by the Provincial government) is a former industrial land that is transforming into a sustainable, mixed-use, pedestrian-friendly, riverside community.

Thanks to the waterfront renewal project, this area will be characterized by 6,000 new residential units, wide spaces for employment and trade, one elementary school, two child-care centers and 9.3 hectares of parks and public spaces.

Thanks to the land reclamation works and the construction of a flood protection landform the development potential of this area has been unlocked.

Development of community has been accelerated thanks to the development of an Athletes' village for the Toronto 2015 Pan/Parapan American Games. It allows for increasing the pace of the industrial land transformation into a sustainable and mixed-use neighrbourhood.

East Bayfront area has been a reminder of Toronto's industrial past for years.

After years of planning, this area is characterized by two parks, a kilometre-long continuous promenade (1 km continuous water's edge promenade) and a boardwalk.

In addition, community's residential and commercial developments (3 million square feet of commercial space) are intersected with these public spaces (5.5 hectares).

This area will be a key hub for retail and cultural facilities, easily reachable by public transportation. The main street of this area will be pedestrian and cyclist-friendly. East Bayfront will provide 6,000 residential units (including 1,200 affordable residences) and millions of square feet of employment space for 8,000 jobs. The area will host an intelligent community that will attract many activities (as creative and cultural industries).

There is one of the largest media and entertainment companies of Canada and a Campus that hosts already more than 3,500 full-time students.

Port Lands area, being an underutilized industrial area developed along the waterfront and located 30 minute walking from the centre of Toronto, represents a great opportunity for waterfront revitalization. It is largely publicly owned.

It border on Lake Ontario that is used formally and informally as recreational space.

The Port Lands are man-made and this area was used since the beginning for industrial uses. The area currently lacks servicing for other uses.

Much of the Port Lands area lies in the flood plain of the Don River and so it requires a flood protection before developing.

The development process of this area is characterized by an intensive public consultation. The work has been a highly collaborative process among Waterfront Toronto, City, Region, Port Authority, Toronto Port Land Company and other stakeholder as land owners, tenants, port users, etc.

To date, planning actions by Waterfront Toronto and City of Toronto have been based on a vision related to the realization of mixed-use communities in the Port Lands.
A lot of topics are addressed into the plan. It defines, for example, urban structure; phasing of infrastructure and development; parks and public space linkages; transportation structure, energy and soil remediation strategies and sustainability process.

2.3.6 Rotterdam

Europe, The Netherlands

Project area:

Fig. 10 – Rotterdam port area

Source: www.theportandthecity.wordpress.com

Rotterdam is one of the best examples of port city regeneration project. The city is become one of the main European port. It is the largest port of Europe

The port of Rotterdam is the largest port in Europe, the 4th one in the word. It is an important transit hub for good between Europe and the world. It is also the largest dry bulk port in Europe with a total volume of some 85 million tons, i.e. a share of 33.1% in the HLH range and 9.2% in the European port system.

It is an example of waterfront regeneration starting from former port areas and the growth and future of the city is strictly connected to the port life. It has become one of the main seaport (logistic and trade center). The case of Rotterdam is one of the best practices of regeneration: it is a demonstration that the revitalization of port functions and structures can proceed at the same rate as the revitalization of urban centre. It represents a good demonstration of the linkage between port and city regeneration, the waterfront regeneration help to establish the relation between city and sea and that new functions and services establishment helps to ensure the usability of the areas. The key of success surely lies in the cooperation/coordination among different actors and authorities and in the participation processes in the decision making.

The redevelopment program of the port area has become an integrated project at urban scale, a strategic project for the city and for its inhabitants, focusing on public interests and social objectives.

The optimal use of the opportunities offered from the location along the estuary of the Rhine River allowed the city to become one of the world's leading ports.

The project drawn up by the Municipal Port Authority for the Porto 2010 defined developing priorities, providing guidance and concrete proposals.

In the Kop van Zuid area, the project (funded by the Dutch government) provides for the connection of urban areas located along the Maas River and between the two banks, the strengthening between the river and the urban context, the economic development towards the river and the construction of new neighbourhoods.

The recovery of an area of 202 hectares through offices, residential units, commercial areas, recreational areas, educational and training areas allowed transforming a

particularly degraded area in a neighbourhood able to attract in a few years businesses, residents and tourists, through the integrated planning and coordination among different working groups.

Rotterdam's port expansion towards the sea has been due to improvements in cargo handling and evolving maritime technologies.

But this port development towards the sea, guided by economic logics, has caused a barrier between city and sea and many negative environmental effects.

Generally, people perceived large ports as an innovation and economic source through the presence of multinational firms and industrial clusters.

The port of Rotterdam is focusing on environmental and innovation aspects, particularly those related to sustainable transport and energy sector, because the environmental aspects play an increasing role in attracting investors and business partners. The greening of port activities is considered as a competitive advantage.

For this reason invest the city of Rotterdam invest in innovative solutions for producing wind and solar energy and decreasing urban congestion (Rotterdam Climate Initiative, through the city aim to achieve 50% reduction of CO2 emissions adapt to climate change, and promote the economy in the Rotterdam region") (www.rotterdamclimateinitiative.nl).

The city of Rotterdam is moving towards a flexible energy infrastructure for an efficient and sustainable energy mix in the system city-port.

The goal of Rotterdam is to become a zero-carbon city by 2050, as indicated in the Next Economy Road Map (AA.VV., 2016).

In the port of Rotterdam a lot of projects are underway contributing to this energy transition, as Rotterdam BioPort (since 2010), Delta Plan for Energy Infrastructure (since 2013), SmartPort (since 2015), Transition Arena (since 2015) and Energy Trend Analysis (since 2015) (AA.VV., 2016).

In the last decade, unchanging the CO2 emission between 2005 and 2013, the transit of goods has increased by 26%, the added value of 11% and the employment by 17%. This is due thanks to the efficiency of plants in port areas as result of new technologies and the replacement of old equipment. One goal is to

transform between 2015-2018 industry as a source of heat, ensuring the connection of 150000 homes to the municipal heating network by 2035 (AA.VV., 2016).

Simultaneously, the port areas qualify as excellent locations for port related and urban functions. the expanding service sector and the growth of well-paid jobs cause a greater demand for housing , office, retail, and leisure functions in central and distinct places in the city.

Thus, the waterfront reflects sociocultural trends of the city: developing attractive residential areas, the port is integrated with the urban fabric. The port is no longer considered only as a place producing negative environmental impacts, but as a place that allows a particular and special lifestyle.

In throughput terms Rotterdam is the largest port in Europe. It is followed by Antwerp (178 million tons), Hamburg (121), Amsterdam (89) and Marseille (86).

Port-related activities represent approximately 13% of the regional value added for Rotterdam.

2.4.7 Barangaroo

Australia, Sydney

Project area: 22 hectares

Fig. 11 – Bangaroo Waterfront

Source: www.theguardian.com

Barangaroo is placed in Sydney, on the western Harbour foreshore. It comprises three areas: Reserve, Barangaroo South and Central Barangaroo.

It is a very ambitious long-term urban renewal project. It is one of the world's foremost waterfront renewal projects. It started in 2012 and should be completed in 2022-2024 (www.barangaroo.com).

The site is a precinct of about 22 hectares of Sydney (Australia) and aims to make Sydney as Australia's gateway to the world. The owner of the area is NSW Government (New South Wales Government), while it is managed the Barangaroo Delivery Authority.

Barangaroo is a former industrial site. Its past land use contributed to its contaminated nature. So, in 2009, the NSW Environmental Protection Authority (EPA) stated the need for the site.

To this end a remediation action plan was drawn up and approved.

The investment of $6+ billion will contribute to redefine the western edge of Sydney Harbour. It aims to become an important hub for design excellence and sustainability.

Once completed, it will provide space for over 24,000 permanent jobs and over 11 hectares of newly accessible public domain. When the project will be complete, it will accommodate over 23,000 workers and residents and will host an estimated 33,000 visitors a day (about12 million a year).

The aim is to ensure that 90% of visitors go to the site by walking or public transport; so a transport plan is ongoing.

In Barangaroo there are three project areas. They are: Barangaroo Reserve, Central Barangaroo and Barangaroo South.

It has been undertaken a stady aiming to the exploration of cultural development opportunities for Sydney with specific options for inclusion at Barangaroo. The aim of the study is to make Barangaroo nationally and internationally competitive in terms of tourism, cultural events and festivals. (è collegato al Cutaway)

The Barangaroo Public Art and Cultural Plan has invested in public art and cultural programming which will be fully funded and delivered at no cost to taxpayers.

Barangaroo, trying to produce zero waste and improve community wellbeing, represents a good opportunity to make Sydney a world leader in sustainability.

Over 50 percent of Barangaroo will be dedicated public space, including a 2.2 kilometre foreshore walk and the naturalistic Barangaroo Reserve.

To reach these goals, Authority and the site's developers will improve city infrastructure. Some measures will be taken, such as , recycled water service and waste recycling service, the generation of new solar renewable energy to satisfy public spaces demand, the free WiFi supply, the creation of green travel options, etc.

External organizations and companies operating on the site will have to manage their activities according to sustainability principles. They will contribute, for example, to reduce waste going into landfill by 97%, to plant 100% native plants, to save energy, to use recycled water for not -potable use, to promote facilities for walking.

Barangaroo Reserve is park marking the transformation of the former and ugliest industrial sites into a six-hectares open spaces that visitors and residents can enjoy along the foreshore.

Using innovative, industry-first technology, a concrete container terminal has been "regenerated" and transformed in a naturalistic rock, using more than 75,000 native trees and shrubs.

This area is characterized by extensive walking (10 metres wide) and cycling trails, picnic areas and place for recreation. It will host a new cultural centre (the Cutaway) and an underground 300-space car park.

The Cutaway will be a national centre of Indigenous art and culture providing an internal space for 5,500 people.

Barangaroo is a leader in financial and professional services and retail in Australia.

Barangaroo South area is characterized by mixed use of space. There are commercial and office buildings, residential units, shops, restaurants, hotels and cultural facilities.

Once completed, this area will host 20,000 office workers daily and up to 90 retailers. The first building has been completed in 2015.

The three International Towers Sydney have been built and two of them are occupied.

Over 11,000 people work there (16,500 by February 2017). 159 new apartments are built and occupied. There are over 50 new cafes, shops and restaurants, including over 10 waterfront dining.

Sitting between the Barangaroo Reserve and Barangaroo South, Central Barangaroo will be the public heart of Barangaroo.

The public heart of Barangaroo will be between Barangaroo Reserve and Barangaroo South. It is Central Bangaroo. This development will produce many cultural attractions, retails and businesses.

The site is 5.2 hectares large, of which 3 hectares of waterfront.

This area is part of the plans for the new Sydney Metro and a new station will be located at Central barangaroo.

3. URBAN PRODUCTIVITY AND CULTURAL HERITAGE

"Heritage conservation has been portrayed as the alternative to economic development, 'either we have historic preservation, or we have economic growth.' That is a false choice. In fact, heritage-based economic strategies can advance a wide range of public policy priorities."

D. Rypkema, European Cultural Heritage Forum, 2005

Source: Van Oers R. - International Symposium on the Historic Urban Landscape

3.1 Introduction: from a conservation-oriented approach to a value-oriented approach

Cultural heritage is considered an essential component of the urban system, of the city as a living organism, as anticipated in 1915 Patrik Geddes (Geddes, 1915); the city is a dynamic, complex and adaptive system (Fusco Girard, 2014a) that, reflecting changes in society and turning with it, adapts to new needs in a dynamic perspective.

Urban heritage conservation in a period of great and rapid urbanization represents today a great challenge for cities (Bandarin and van Oers 2012; Bandarin and van Oers, 2014).

Cities are a place of great potential, but also of strong contradictions: they can be the engine of cities economic growth but, at the same time they can be the place of poverty, diseconomies, pollution, etc. (Fusco Girard, 2014b).

Recent debates highlight the role of cultural heritage in urban sustainable development; they can play a key role in enhancing living conditions, social cohesion, community wellbeing and prosperity (UN-Habitat, 2014; Hosagrahar et al., 2016; Potts, 2016).

The European commission recognized the key role of cultural heritage/landscape in sustainable development. In 2014 the Council of European Union, considering cultural heritage as common good, defined guidelines "towards an integrated approach to cultural heritage for Europe" that highlights this strategic role of cultural heritage (European Commission, 2014). It represents an important economic resource in global competition.

This Communication of European Commission (European Commission, 2014) uses, for the first time, the notion of "intrinsic and social value of heritage" in an institutional statement (section 2.1). This document highlights the contribution of heritage to economic growth and job creation (section 2.2). It emphasizes the different dimensions of heritage (cultural, physical, environmental, human and social) and its values (both intrinsic and economic).

The intrinsic value is related to the need of conserving relevant parts of heritage as it represents a symbol of common and shared characteristics that are rooted in the history of a community. It is source of shared identity and sense of belonging, of meaning etc.; in other words of heritage community. It is not linked to use or function that it serves; it bonds community to space "determining the spirit of place and source of pride, that is of interest for future generation". The social value is instead referred to the capacity of cultural heritage to be a catalyst of social links and relationships (that trigger new economic value). Relationships become bonds that are able to create *new values* chains that increase city productivity, through circular processes, synergies, symbiosis (Fusco Girard, 2014a).

The values recognized to the cultural heritage are based on a complex vision that takes into account not only the cultural and economic components, but it expresses

also the social and environmental ones. It expresses the “Complex Social Value” (VSC), considering the asset without separating it from the community and the environmental context (Fusco Girard, 1987; Fusco Girard and Nijkamp, 1997).

The Complex Social Value of a resource can be defined as a combination of its different economic values and its “intrinsic value”,

$$VSC= (VET, i)$$

that can be deduced from the knowledge relating the role of this resource in a specific social/cultural/institutional system. This notion considers all users of a resource (direct, indirect, potential and future), the values of use and non-use and incorporates in itself the intrinsic values (Fusco Girard and Nijkamp, 1997).

An important step in the evolution of the concept of cultural heritage was in 1970s when there was a shift from a conservation-led to a value-led approach to heritage (CHCfE Consortium, 2015). Then, another important step was the recognition of the all-inclusive nature of historic environment, where tangible and intangible heritage were no perceived as two distinct entities.

During 1990s policy documents on cultural heritage began to include principles of sustainability.

The Getting Cultural Heritage to Work for Europe report (European Commission, 2015) represents a further confirm of the increasing interest in the potential benefits of cultural heritage. In fact, it introduces some recommendation for an innovative policy framework and agenda for cultural heritage-related research and innovation up to 2020.

The European Year of Cultural Heritage proposed by the EU Council (and supported by the European Commission and the European Parliament) represents an important opportunity for all stakeholders/actors (both private and public) to collaborate and contribute to increase the awareness of the value and multidimensional benefits of cultural heritage (economic, social, environmental).

The Heritage Counts for Europe report (CHCfE Consortium, 2015), throurgh the analyses of cultural heritage impacts, highlights the predominance of economic

studies. Studies about cultural and social impacts began to increase around 1990s onwards, while environmental impact studies represent a rather new field of research.

The EU-funded project Cultural Heritage Counts for Europe (a two-year project, supported by the EU Culture Programme) provides 10 interesting key finding, starting from the analysis of existing evidence-based research and case studies related to the economic, social, cultural, and environmental impacts of cultural heritage (CHCfE Consortium, 2015):

1. *"*Cultural heritage is a key component and contributor to the attractiveness of Europe's regions, cities, towns and rural areas in terms of private sector inward investment, developing cultural creative quarters and attracting talents and footloose businesses — thereby enhancing regional competitiveness both within Europe and globally.
2. Cultural heritage provides European countries and regions with a unique identity that creates compelling city narratives providing the basis for effective marketing strategies aimed at developing cultural tourism and attracting investment.
3. Cultural heritage is a significant creator of jobs across Europe, covering a wide range of types of job and skill levels: from conservation-related construction, repair and maintenance through cultural tourism, to small and medium-sized enterprises (SMEs) and start-ups, often in the creative industries.
4. Cultural heritage is an important source of creativity and innovation, generating new ideas and solutions to problems, and creating innovative services — ranging from digitisation of cultural assets to exploiting the cutting-edge virtual reality technologies — with the aim of interpreting historic environments and buildings and making them accessible to citizens and visitors.
5. Cultural heritage has a track record on providing a good return on investment and is a significant generator of tax revenue for public authorities both from the economic activities of heritage-related sectors and indirectly through spillover from heritage-oriented projects leading to further investment.
6. Cultural heritage is a catalyst for sustainable heritage-led regeneration.

7. Cultural heritage is a part of the solution to Europe's climate change challenges, for example through the protection and revitalisation of the huge embedded energy in the historic building stock.
8. Cultural heritage contributes to the quality of life, providing character and ambience to neighbourhoods, towns and regions across Europe and making them popular places to live, work in and visit — attractive to residents, tourists and the representatives of creative class alike.
9. Cultural heritage provides an essential stimulus to education and lifelong learning, including a better understanding of history as well as feelings of civic pride and belonging, and fosters cooperation and personal development.
10. Cultural heritage combines many of the above-mentioned positive impacts to build social capital and helps deliver social cohesion in communities across Europe, providing a framework for participation and engagement as well as fostering integration".

There is an increasing awareness of the contribution of cultural heritage to different dimensions, that is economy and social issues, culture and environment but, at the same time, there is a lack of evidence for cultural heritage benefits. There is no a comprehensible overview of the value and relevance of heritage that can be useful to steer development policies.

Until some decades ago, cultural heritage conservation has mainly focused on the conservation of historic buildings and archaeological sites. Cultural heritage was referred to tangible assets of the past and document and policies of those years show it. For example, the 1954 UNESCO Convention on the Protection of Cultural Property (UNESCO, 1954) aimed to protect properties from physical destruction.

The Venice Charter (1964) (ICOMOS, 1964) was focused on built heritage, its cultural value and physical conservation. So, the heritage policies were focused on what to protect and preserve for future generation.

Today's policies are oriented not only towards the physical preservation of cultural heritage, but also towards the conservation of all values of cultural heritage. This holistic approach is highlight in the recent UNESCO Historic Urban Landscape Recommendation (UNESCO, 2011) that consider, as explained in the third chapter,

multidimensional impact and different values of heritage, both tangible and intangible.

A first step that moves away from the conception of heritage as property alone is the definition of UNESCO World Heritage Convention in 1972, although it was applied to immovable property (monuments, sites, etc.). In this convention a public interest in heritage began to emerge.

In 1983 UNESCO identified "to bear a unique or at least exceptional testimony to a civilization which has disappeared" as Criterion III to include sites in World Heritage List. This criterion became in 1996 "to bear a unique or at least exceptional testimony to a cultural tradition or to a civilisation which is living or which has disappeared" (www.whc.unesco.org).

The evolution of the guidelines is significant. The attention began to be focused also on the contribution of intangible cultural heritage of living traditions to the outstanding universal value of the World Heritage Property. So, an interest to intangible cultural heritage begins to emerge.

This shift is officially established after the Nara Document on Authenticity (1994) when the intangible aspect of cultural heritage was increasingly cited and distinguished from the tangible.

This is even more highlighted by the UNESCO Convention on the Safeguarding of Intangible Cultural Heritage (2003) and the Council of Europe Framework Convention on the Value of Cultural Heritage for Society, where a holistic definition was proposed.

The vision that considers tangible and intangible heritage as two things not separated is then disseminated by the UNESCO Historic Urban Landscape Recommendation.

Cultural heritage preservation was considered as opposing development and this vision was enshrined in the Athens Charters (1931 and 1933) (Veldpaus et al., 2013, p. 7). This tendency began to change in the 1970s and 1980s. In 1976 UNESCO Recommendation Concerning the Safeguarding and the Contemporary Role of Historic Areas states underlined the importance of identification of "the reciprocal links between protected areas and surrounding zones" (UNESCO, 1976).

The UNESCO Mexico City Declaration on Cultural Policies (1982) is important because it focused its attention on the cultural dimension of development affirming that "balanced development can only be insured by making cultural factors an integral part of the strategies designed to achieve it" (UNESCO, 1982).

The Nara Document on Authenticity stated in 1994 that "the protection and enhancement of cultural and heritage diversity in our world should be actively promoted as an essential element of human development" (UNESCO, 1996).

In 1996 ICOMOS (International Council on Monuments and Sites) National Committees highlighted the social value of cultural heritage, stating that "protecting social value is complex because so many separate interest groups may be involved" (ICOMOS, 1996).The economic value of cultural heritage emerges, but with a clear reference to tourism sector.

The concept of sustainability began to be included in documents related to cultural heritage policies during 1990s. Often it was combined with "development" (Veldpaus et al., 2013, p. 11).

However, at the beginning, the concept of sustainability, according to Throsby (Throsby, 1997), continued to have a predominantly environmental connotation and the link between culture and sustainability is only suggested and not taken further.

Today cultural heritage is perceived as a driver for sustainable development. It is highlighted by the Paris Declaration on Heritage as a Driver for Development issued by ICOMOS. This approach is confirmed by the UNESCO that in 2012 stated that "The active protection of urban heritage and its sustainable management is a condition sine qua non of development" and it "fosters economic development and social cohesion in a changing global environment".

It is also significant that UNESCO participated "Rio+20" UN Conference on Sustainable Development in June 2012. The outcome document recognized the importance of the investments in cultural tourism, the need for conservation of natural and cultural heritage and historic districts.

A very important step in this process is the Hangzhou Declaration (Placing Culture at the Heart of Sustainable Development Policies, 2013). This declaration proposed to consider culture as the fourth pillar of sustainable development, at the same level of

the other pillars (economic, social and environmental), highlighting that "inclusive economic development should also be achieved through activities focused on sustainable protecting, safeguarding and promoting heritage" (UNESCO, 2013).

The shift from a conservation-oriented approach to a values-oriented approach is highlighted also by the Council of Europe that, through the Framework Convention on the Value of Cultural Heritage for Society in 2005 and Congress of Local and Regional Authorities of the Council of Europe (2006) underlined the socio-economic value of cultural heritage and its contribution to the creation of democratic society (CHCfE Consortium, 2015).

More recently, the Council of the European Union adopted "Conclusions on cultural heritage as a strategic resource for a sustainable Europe" (2014). These recognized the key role of cultural heritage in sustainable development and, in holistic approach to cultural heritage, its capacity to enhance social capital.

Later, the European Commission adopted in July 2014 the communication entitled "Towards an integrated approach to cultural heritage in Europe" (European Commission, 2014) that consider cultural heritage as an asset in economic growth and social cohesion.

3.2 The role of Cultural Heritage in 2030 Agenda for Sustainable Development and The New Urban Agenda

The 2030 Agenda for Sustainable Development, as mentioned in the first chapter, has defined as a plan of action for people, planet and prosperity (United Nations, 2015a).

It introduces 17 goals for Sustainable Development (Sustainable Development Goals, SDGs) in a big action program for a total of 169 targets.

Even if Sustainable Development Goals are recognized all over the world, in the current context sustainable development can only be achieved at the local level (Zeleny, 2010).

The goal 11 is referred to the cities, in particular to the need of making cities and human settlements "inclusive, safe, resilient and sustainable", through "inclusive and

sustainable urbanization, planning and management" (Target 11.3) and more "efforts to protect and safeguard the world's cultural and natural heritage" (Target 11.4).

Cultural heritage plays a marginal role in the 2030 Agenda for Sustainable Development. The reference to the contribution of cultural heritage to sustainable development is weakly considered in the SDGs, although it can contribute to the achievement of the Goal 11 (as already mentioned), to the Goal 1 - End poverty in all its forms everywhere (improving resilience to economic, social and environmental shocks) and Goal 8 - Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all (fostering resilient local economies based on endogenous resources) (Fusco Girard et al., 2015).

Cultural heritage is explicitly mentioned only once in the Goal 11, exactly at the target 11.4 ("strengthen efforts to protect and safeguard the world's cultural and natural heritage"), one out of 169 targets. However t is a weak reference because it is not specific on cultural heritage, but it is mentioned together with natural one; furthermore, this specific target deals with only the *protection* and *safeguard* of cultural heritage, without any reference to its valorization.

The New Urban Agenda, NUA, (United Nation, 2016a) recognizes cultural heritage as an important factor of the urban sustainable development. There is no explicitly reference to Historic Urban Landscape, but it is present underlying in many points of Quito Implementation Plan. In fact, the point 10 of Quito Declaration reports that "culture and cultural diversity are sources of enrichment for humankind and provide an important contribution to the sustainable development of cities, human settlements and citizens". Culture should be taken into account to promote and implement the sustainable consumption and production patterns (point 10).

In the New Urban Agenda, particularly in the "Quito Implementation Plan for the New Urban Agenda" section, there are many points that highlight the role of cultural heritage (both tangible and intangible) in the urban sustainable development.

In the point 38 of "Transformative Commitments", it is recognized the role of cultural and natural heritage "in rehabilitating and revitalizing urban areas, and in strengthening social participation and the exercise of citizenship". Culture is

considered a key element in the humanization of cities and human settlements (point 26).

Points 45 and 60 of NUA highlight the role of cultural heritage in developing vibrant, sustainable and inclusive urban economies, and in sustaining and supporting urban economies to progressively transition to higher productivity.

In the Effective Implementation section there are three points of the "Planning and managing urban spatial development" paragraph that make explicitly reference to cultural heritage. The point 119 deals with the promotion of adequate investments in protective, accessible and sustainable infrastructure and service provision systems, ensuring also culturally sensitive sustainable solutions.

More explicitly, the point 124 includes "culture as a priority component of urban plans and strategies in the adoption of planning instruments, including master plans, zoning guidelines, building codes, coastal management policies, and strategic development policies that safeguard a diverse range of tangible and intangible cultural heritage and landscapes" and the necessity to "protect them from potential disruptive impacts of urban development".

Cultural heritage is recognized as leverage for sustainable urban development. It has an important role in stimulating participation and responsibility, too (point 125). This point of the New Urban Agenda includes also the promotion of "innovative and sustainable use of architectural monuments and sites with the intention of value creation, through respectful restoration and adaptation". It is recognized the importance to engage "indigenous peoples and local communities in the promotion and dissemination of knowledge of tangible and intangible cultural heritage and protection of traditional expressions and languages, including through the use of new technologies and techniques". So, innovative and sustainable use of architectural monuments and sites is considered as a mean to promote value creation, coherently to the Historic Urban Landscape Recommendations.

Some international organizations, for example UNESCO and ICOMOS (International Council on Monuments and Sites), highlight the key role of culture in the achievement of sustainable development (Hosagrahar et al., 2016; Potts 2016).

The World Urban Campaign (WUC), promoted by UN-Habitat through a series of initiatives (for example the Urban Thinker Campus), plays an important role in this international debate.

In the report of the first Urban Thinker Campus, which was held in Caserta on 15 – 18 October 2014, there is an explicit reference to the Historic Urban Landscape (UNESCO, 2011). It is recognized as a key factor to ensure "quality" to the urbanization processes. In the final report of this initiative (UN-Habitat, 2014), Hybrid Landscape is recognized as engine of local economic development. The productivity and quality of hybrid landscape can be assessed only through multidimensional tools, that is quanti- and qualitative matrices and indicators. The latters have to be deduced from empirical evidence and to be able to integrate the economic dimension with the social, cultural and environmental ones.

Operative tools to implement the UNESCO approach have been proposed, as living lab platforms, ICT and new technologies, fiscal and financial tools.

In the outcome document of the WUC, called "The City We Need" (UN-Habitat, 2016), 10 principles for a new urban paradigm and 10 drivers for change are proposed to be included in the New Urban Agenda. In particular, the principle 7 ("The City We Need has shared identities and sense of place") recognized culture as "key to human dignity and values diversity as a source of creativity, growth and learning in a knowledge economy". The City We Need document "develops local solutions to urban challenges through the use of local culture and heritage, local skills and materials and local knowledge".

The driver of change number 10 recognizes the importance of monitoring and evaluation and the necessity to implement them. In this perspective, open data platforms, data collection and regular monitoring systems are fundamental. Citizen should have the "ability and to collect, analyze and access data on public authorities and the private sector".

In summary, the role of culture and heritage to achieve a more inclusive, resilient, safe and sustainable city is going to be more and more recognized. "Landscape can be interpreted as a complex indicator for sustainability of the city or territory, of the

quality of life, vitality of the place, and community's sense of belonging" (Hosagrahar *et al.,* 2016).

3.3 The UNESCO Historic Urban Landscape Approach

In the last decades, the attention moved from the "monument" to the context, to the recognition of the importance of social, cultural and economic processes in the conservation of urban areas (UNESCO 2011, art. 4).

The definition of Historic Urban Landscape (HUL) (UNESCO, 2011) is the latest contribution of the international debate on the identification, conservation and enhancement of cultural heritage.

The Historic Urban Landscape is defined as the «historic layering of cultural and natural values and attributes» (art. 8), incorporating the intangible dimension of heritage and the related economic processes.

This approach recognizes the necessity of supporting the protection/safeguard/ conservation/valorization of cultural and natural heritage in a world characterized by a rapid and uncontrolled urbanization, integrating heritage conservation into the transformation strategies and projects.

The 2011 UNESCO recommendations on Historic Urban Landscape (UNESCO, 2011) recognizes the landscape as a "living heritage", an "organism" made of complex characters, relationships and multidimensional inter-relationships (Fusco Girard et al., 2015). It refers to the notion of context to emphasize the systemic interrelationship between economic, social, environmental, cultural aspects and complexity of the framework within which conservation policies lies.

The HUL approach places the heritage conservation in a new systemic vision that links tradition and modernization, present and past, present and future in a circular and synergistic perspective.

The conservation is oriented to respect the integrity of the values and prevent their alteration, assuming a general perspective of change (Bandarin and van Oers, 2012).

The main subject is the city and not a single monument; the city is considered as a complex social and living heritage, that is a "dynamic complex adaptive system"

(Fusco Girard, 2014a), and cultural heritage is a subsystems of its. This vision implies that cultural heritage should evolve with society, reflecting its changes, adapting to the new needs of inhabitants, in an adaptive and a circular way.

The HUL approach also goes beyond the notion of historic centre including "the broader urban context and its geographical setting" (art.8).

It includes "perceptions and visual relationships", "social and cultural practices and values, economic processes and the intangible dimensions of heritage as related to diversity and identity" (art.9).

The approach aims at "preserving the quality of the human environment, enhancing the productive and sustainable use of urban spaces, while recognizing their dynamic character, and promoting social and functional diversity" (art.11).

It introduces the concept that conservation can be considered as a "tool" for managing change while preserving cultural values.

HUL promotes the development of tools to "manage physical and social transformations and to ensure that contemporary interventions are harmoniously integrated with heritage in a historic setting" (art.12), namely innovative civic engagement, knowledge and planning tools, financial tools and regulatory systems (art.24). Heritage, social and environmental impact assessment is considered a key aspect in the recommendations. The assessment of multidimensional impacts of HUL conservation/regeneration on city productivity is fundamental to demonstrate the effectiveness of proposed civic tools, to inform policy design and leverage private and public investments.

Currently, the HUL document presents theoretical criteria for the historic urban landscape conservation, but it is still lacking tools that should to operationalize it; it focuses on "*what* needs to be managed and *why*" (Pereira Roders, 2013), but not on *how* to implement these recommendations.

Although tools are not explicitly suggested, UNESCO indicates a methodological process by which it is possible to apply the HUL approach.

The proposed process (not adopted with the official text of the Recommendations) consists of six critical steps useful to implement HUL approach in the cities, within their specific contexts.

These steps, highlighted also in recent guidelines (The HUL Guidebook, UNESCO, 2016), are:

1. To undertake comprehensive surveys and mapping of the city's natural, cultural and human resources;
2. To reach consensus using participatory planning and stakeholder consultations on what values to protect for transmission to future generations and to determine the attributes that carry these values;
3. To assess vulnerability of these attributes to socio-economic stresses and impacts of climate change;
4. To integrate urban heritage values and their vulnerability status into a wider framework of city development, which shall provide indications of areas of heritage sensitivity that require careful attention to planning, design and implementation of development projects;
5. To prioritize actions for conservation and development;
6. To establish the appropriate partnerships and local management frameworks for each of the identified projects for conservation and development, as well as to develop mechanisms for the coordination of the various activities between different actors, both public and private (UNESCO, 2011).

The most recent guidelines highlight also that "*successful management of urban heritage in complex environments demands a robust and continually evolving toolkit*" (UNESCO, 2016, p.14).

In order to successfully manage urban heritage we need a continually evolving toolkit that includes interdisciplinary and innovative tools. They can be organised into the following different categories (UNESCO, 2011; 2016):

(a) Civic engagement tools

(b) Knowledge and planning tools

(c) Regulatory systems

(d) Financial tool

The HUL toolkit (table 6) can be adapted to each different local context. These tools should change and evolve over time.

Tab. 6 – Toolkit (for city) to implement the Historic Urban Landscape approach

COMMUNITY ENGAGEMENT TOOLS	Planning GIS Big data Morphology Impact/vulnerability assessment Policy assessment
KNOWLEDGE AND PLANNING TOOLS	Publicity Dialogue and consultation Community empowerment Cultural mapping
REGULATORY SYSTEMS	Laws and regulations Traditional custom Policies and Plans
FINANCIAL TOOLS	Economics Grants Public-private cooperation

Source: Adapted from the HUL Guidebook (UNESCO, 2016)

The evaluation is a fundamental element to manage the conflict between interests and values, through synergistic approaches based on the principles of circularity, sustainability, resilience and creativity.

The HUL approach necessarily requires an adjustment of the assessment tools to provide empirical evidence of the economic, social and environmental impacts related to the conservation of cultural heritage values and attributes. Therefore, assessment methods that integrate the traditional cost-benefit approach, including social and environmental dimensions, are required.

The UNESCO approach explicitly recognizes the contribution of landscape conservation to sustainable development. Impacts on local economy can be made evident through the use of performance indicators, which are fundamental tools to attract the financial resources necessary for urban regeneration.

Cultural heritage conservation produces economic benefits (EVOCH, 2012), social and environmental, but it needs to produce empirical evidence through assessment tools in order to demonstrate the multiplier effects of investments and attract funding from private and private-social sector.

The multidimensional benefits (cultural, social, environmental, economic) generated by HUL demonstrate the convenience of investments in the medium-long term.
The evaluation process is today based on ex-ante assessments. Instead, public policies need ex-post assessments, based on the critical analysis of concrete experience.
To this end, a set of performance indicators (listed and analysed in the following paragraphs) has been deduced from the analysis of good practices of conservation/regeneration projects in order to demonstrate the convenience of these projects in different contexts. Empirical evidence is provided in order to show how investments in HUL conservation/regeneration can produce employment and enhance social cohesion and city resilience, contributing to the achievement of SDGs.
The notion of HUL, even if related to World Heritage context, can be applicable to any heritage context and surroundings, too.

3.4. International debate about cultural heritage indicators

For decades, researchers and practioners have claimed that cultural heritage conservation has positive impacts, but this assertion has not been usually supported by robust analyses.
Generally only flows related to socio-cultural benefits are attributed to cultural heritage; for example, the places of historical events, places of worship, or even the symbolic locations in which a community identifies itself are places that keep alive the bond between community and its history, strengthening identity and sense of membership. But, at the same time, cultural heritage is able to produce economic flows. Cultural heritage can become itself “space” for productivity: meta-economic values contribute to economic development.
Loss or depletion of tangible and intangible cultural heritage can produce negative impacts on social and economic development of cities.
Loss of tangible asset makes a society deprived of its symbols and physical links with its history; this would require, for example, a need for building of new spaces, resulting in greater consumption of resources.

Loss of intangible heritage has negative social and economic impacts, too. Loss of social capital and values reduces the ability of a city to create good living conditions for its population: when social capital, synergies/relationships/connections between members of a community are lacking, city is not able to produce what it needs to support its development.

Therefore, on the one hand tangible heritage is the physical space for productive activities; on the other hand, intangible heritage helps make society most integrated and inclusive.

Cultural heritage is too often left out of development programs of cities. It should assume a more central role and it should be well managed. Only a good management can really make heritage a driver for sustainable development. A bad management can cause not only deterioration of cultural heritage, but turn it (from a generator of benefits) into an onerous good for community.

Historic Urban Landscape conservation is an effective catalyst for stimulating local and regional economies producing significant economic impacts (Nypan 2006; Rypkema 2008; Fusco Girard et al., 2015), but it requires empirical evidence.

The answer to the main question, that is if Cultural Landscape can play a role in sustainable development, could be positive only if we are able to produce empirical evidence about its contribution to improve economic, social and environmental productivity of the city (Fusco Girard, 2013).

It is important to convince public, private and social actors about the convenience (economic, social, environmental benefits) of cultural heritage conservation. It needs to produce empirical evidence to demonstrate that cultural heritage conservation/valorization is an investment and not a cost.

Debates and discussions, and a set of good practices are able to give empirical evidence supporting the transition from theories to actions and, therefore, to improve decision making processes.

The good practices of HUL conservation/regeneration demonstrate that it produces economic impacts (Nypan, 2005). It needs to demonstrate also the multidimensional impacts of investments in cultural heritage in order to convince about its capacity to

contribute to increase the overall local productivity, to improve wellbeing of inhabitants and to attract funding from the public, private and private-social sector.

This multidimensional perspective implies a systemic and integrated conservation approach, requiring assessment tools (methods, indicators, etc.) able to compare the costs of conservation of the past with the benefits of the change. They are fundamental to move from principles to practice and "convince" all actors/stakeholders about the socio-cultural and economic value of cultural heritage and the benefits of integrated conservation. Therefore, these tools are necessary to assess the multidimensional "productivity" of cultural heritage conservation/regeneration and to allow replication and scaling-up of successful practices. They are necessary to identify and evaluate the economic value of cultural heritage and to convert its "soft" values in monetary ones, are required.

Indicators synthesizing complex values of HUL and expressing the variations in terms of produced benefits are required to monitor and assess the benefits produced by HUL conservation/regeneration actions.

The selection of indicators should take into account the objectives, specific conditions of places, socio-economic conditions and political choices and preferences.

The processing of a database of good practices has the purpose of supporting the construction of a multidimensional matrix that can produce empirical evidence about impacts of HUL conservation/regeneration projects and its contribution to sustainable development. There is the urgent need for multidimensional indicators through which assessing the contribution of HUL to SDGs. The evaluation approaches have been reviewed starting from the evaluation deduced from actual case studies.

"Heritage performance as a contributor to economic values can be measured by indicators, which are today consistently used as an integrated approach for measuring and monitoring cities. They are considered a perfect tool to test city performances. Indicators are used to communicate information and to make predictions on future performance. They can simplify the interpretation of complex systems and help decision makers. The use of indicators does not substitute for the use of database, however it is a very pragmatic approach when direct documentation would be too

costly and time intensive Heritage indicators also express how economic value may be consistent with sustainable development goals" (Ost, 2012).

The use of indicators is important for monitoring and evaluating (ex-ante and ex-post) strategies and policies, and quantifying multidimensional benefits of projects. They represent a useful tool able to compare urban practices and to evaluate urban management performances. Indicators can represent a basis of information for decision-makers.

The identification of indicators able to provide an effective assessment of sustainable urban transformations represents today a great challenge.

A set of indicators to assess, in particular, the role of culture in sustainable development (and thus the multidimensional benefits of cultural heritage conservation/valorization) is urgently required.

Indicators related to cultural heritage should reveal authenticity, integrity and cultural values and, at the same time, monitor impacts on tourism sector, environmental capital, community wellbeing, etc. (Munarim and Ghisi, 2016; Tweed and Sutherland, 2007). In other words, these indicators have to be used to assess and monitor the state of conservation of cultural heritage, but also to evaluate the impacts of cultural heritage conservation/regeneration on the city, that is its contribution to sustainable development.

However, there are a very few researches about indicators able to support the relationship between cultural heritage conservation/regeneration and development.

Good and best practice are analysed just to fill this gap, that is to construct a multidimensional indicators matrix able to evaluate multidimensional impacts of heritage conservation/regeneration.

As mentioned in the previous chapters, the international debate about Sustainable Development Goals (SDGs) recently highlighted the role of cultural heritage in sustainable development, but it is explicitly mentioned only once in the Goal 11 (make cities and human settlements inclusive, safe, resilient and sustainable), particularly in the target 11.4, regarding "strengthen efforts to protect and safeguard the world's cultural and natural heritage".

For this target (11.4 of SDGs), the first document on performance indicators was produced by United Nations in June 2015.

To date, the result of a series of public consultations with agencies and organizations has been only one indicator related to the Target 11.4:

"11.4.1 *Total expenditure (public and private) per capita spent on the preservation, protection and conservation of all cultural and natural heritage, by type of heritage (cultural, natural, mixed and World Heritage Centre designation), level of government (national, regional and local/municipal), type of expenditure (operating expenditure/investment) and type of private funding (donations in kind, private non-profit sector and sponsorship)".*

This indicator aims to illustrate how financial efforts/actions made by public authorities at different level (local, national and international levels), alone or in partnership (for example with civil society organizations and private sector), to protect and safeguard cultural heritage have a direct impact in making cities and human settlements more sustainable. "This means that cultural resources and assets are safeguarded to keep attracting/to attract people (inhabitants, workers, tourists, etc.) and financial investments, to ultimately enhance the total amount of expenditure" (www.unhabitat.org)

However, only one indicator, based on the expenditure per capita, is an oversimplification too much limiting.

The indicator 11.4.1 is not effective to achieve the goal 11.4 of SDGs neither for the achievement and monitoring of the New Urban Agenda. It does not represent an indicator of effectiveness.

A first weakness of this indicator is that it is not specific on cultural heritage, but the latter is mentioned together with natural one. It is not a significant indicator and it can be considered rather abstract.

There are some methodological problems related to this indicator. For example, the expenditure per capita is not comparable in each country. Furthermore, it is not clear how to quantify it, which data should be used, which data sources are. The indicator 11.4.1 needs to be drastically improved. This indicator does not highlight the impacts

that cultural landscape has on city productivity; it is not useful to assess multidimensional benefits that it is able to produce.

In this framework, UNESCO and ICOMOS recognized the need of an additional set of indicators and adequate evaluation tools able to asses and monitor the contribution of cultural heritage to the achievement of goal 11 and, more in general, to sustainable development.

Although this vision, empirical evidence about multidimensional benefits of cultural heritage conservation/regeneration (and so its contribution to urban sustainable development) is still lacking.

Indicators and evaluation methods to assess the contribution of CH to increase city multidimensional productivity still represent a gap and thus an open field of experimentation.

This set of indicators should include indicators referred to local level, including both quantitative and qualitative indicators, both objective and subjective indicators (beyond the mere economic-financial dimension of development).

There is the necessity to specify the indicator, data source, methodology for each case.

Indicators for assessing the role of cultural heritage in the achievement of sustainable development need to integrate economic, social and environmental dimensions, both in short and long term. Moreover, indicators have to be understandable, available, representative, measurable and comparable in order to be effective indicators. Data have to be reliable and viable on a periodic interval basis (for example an annual base) and be relevant for public policies. They need to be compiled using a systematic method. They should be clearly understandable by people and involve community.

3.5. Multidimensional impacts of cultural landscape conservation/regeneration

In order to understand what are the main indicators used to identify impacts of historic urban landscape conservation/regeneration, 40 case studies (Annex A) have been analysed. The different good practices analysed have allowed capturing the multidimensionality of the conservation issue.

A database of good practices has been developed to extrapolate indicators for recomposing the indicator matrix. The aim is to develop an indicator framework able to support the ex-ante and ex-post assessment.

Every case study has been deeply analyzed and a summarizing sheet has been elaborated for each of them. These sheets are related to the indicators emerged from the analysis. The year of project (if aviable) is indicated in each case studt in order to measure indicators ante and post investments, and thus to undestand the impacts (in the case studies related to European Capital of Culture the reference year is that of nomination).

The use of indicators arises some problematic issues: issues of credibility and comparability. As Berthold et al. (2015) highlight, a set of indicators can be manipulated for a political purpose, assessing for example performances by using "only the indicators that display good results".

Furthermore, the indicators are different depending on location and scale of intervention (building, site, etc.). So, it cannot be established an indicators framework valid for every case but, as above mentioned, they need to be considered and selected case by case.

The indicators represent a system of information able to quantify and synthesize a complex phenomenon. They are able to translate complex concepts into misurable information. They alone do not allow accounting for the impact, but they represent a grid that can ensure that the assessment reflects all values and dimensions to be considered. They are a basis of information and, at the same time, allow developing a common language about impacts and benefits of cultural heritage/landscape conservation.

Starting from the sheets of each case study (Annex A), some selected indicators are put into the final matrix. The selection has been based on frequency of use criteria, that is the indicators presented in more case studies and so recognized as more relevant and reliable. The selection of indicators would be a framework useful to identify an assessment approach for the evaluation of historic urban landscape approach.

The indicators have obviously to be contextualized and put in relation to the objectives of the different analysed projects. For example, a case study aiming at redevelopment of built heritage presents major indicators relating to real estate category compared to another case study aiming at increasing tourism (in this case indicators related to the number of visitors, visitors' expenditures, etc. are mainly considered). But, considering the multidimensional impacts of cultural heritage conservation, it is interesting to analyse impacts for each category.

Moreover, data often refer to different periodic intervals and thus they are hardly comparable and aggregated.

The accessibility of information and the comprehensiveness of indicators are fundamental to communicate. Generally, for example, local authorities are used to use indicators that are already available. This study would also to encourage developing data collection methods to provide higher quality information able to compare practices and experiences. The indicators need to be scientifically valid and operational.

It is important to underline that both quantitative and qualitative indicators emerged from case studies. This recalls to the complexity of assessment. Quantitative and qualitative approaches are both relevant.

Before the elaboration of the indicators matrix, it is important to understand what they have to refer. In particular, we need to understand how to assess and how the development can be sustainable. Our attention should not focus on how much development a project is able to produce, but how this development is sustainable, to what extent. It needs to refer to sustainable development and not to the development in general.

The indicators have been subdivided into 9 impacts categories that compose the comprehensive matrix for impact assessment. These categories are interdependent. Each impacts category is, in turn, composed of categories of indicators (table 7). The impacts analysed are both *on* cultural heritage and *from* cultural heritage.

The 9 identified categories to assess the "productivity" of HUL conservation/regeneration, that is the multidimensional benefits produced, are the following:

1. Tourism and Recreation
2. Creative, cultural and innovative activities
3. Typical local productions
4. Environment and Natural Capital
5. Community and Social Cohesion
6. Real estate
7. Financial return
8. Welfare/wellbeing
9. Cultural value of properties/landscape

Cultural value of properties / landscape set of indicators for each category has been extracted from 40 case studies of cities (from all over the world). The aim/need has been to build a multi-dimensional system of indicators (both in the short and medium and long term, whether direct, indirect or induced), not only to the macro scale, but also to the micro one (local scale) able to analyze endogenous processes and to supporting the building of development strategies. Each category of indicators will be individually analysed in the following paragraphs. The observations and discussions about each category come mainly from a critical analysis of all the case studies analysed.

Obviously, there is not a set of indicators overall efficient because the specific conditions of the place, the political preferences and socio-economic conditions determine the relevance of each specific indicator in the decision-making process.

Tab. 7 – Impact categories and related indicator categories

IMPACT CATEGORIES	INDICATOR CATEGORIES
(1) TOURISM AND RECREATION	Employment in the sector Touristic Demand Touristic Supply Economic Vitality
(2) CREATIVE, CULTURAL and INNOVATIVE ACTIVITIES	Creative Firms Cultural Demand Cultural Supply Employment in cultural activities Impacts of festivals and other events Willingness to Pay of visitors to cultural events / sites
(3) TYPICAL LOCAL PRODUCTIONS	Economic vitality of companies Employment in the sector Market value of products Production of goods
(4) ENVIRONMENT AND NATURAL CAPITAL	Ecosystem preservation Green areas and facilities supply Pollution Reduction Attraction of new investments
(5) COMMUNITY AND SOCIAL COHESION	Social Cohesion Sharing/ Collaborative Economy
(6) REAL ESTATE	Real estate values Real estate supply Real estate development Vacancy rates
(7) WELLBEING	Employment Economic wellbeing Education and training Security Research and innovation Quality of services Housing quality Social care (BES Indicators + OECD Better Life Index)

(8) PUBLIC FINANCIAL RETURN	Real estate Selling Revenue Employment Social Care Environmental Social Cohesion Tourist flow
(9) CULTURAL VALUE OF PROPERTIES/LANDSCAPE	State of Conservation of heritage/landscape asset

3.5.1 Tourism and recreation

The first category is about tourism and recreation (table 8). The indicators about tourism are the most known because the impacts related to this category are more immediate and obvious, especially in the short term (D'Auria, 2009). It is a sector able to transform cultural values into the economic ones. It produces new employment and new wealth in the short time. There are many good practices that empirically demonstrate the benefits in tourism sector, in terms of hotels, restaurants, etc.

The economic impacts are generally interpreted only in the touristic demand perspective, but empirical evidence shows that there are other economic impacts.

Tourism is referred in particular to the instrumental value of the cultural heritage but, as mentioned in the previous paragraph, the latter has also an intrinsic value and a social value (Fusco Girard, 1987). All the values are able to increase (in a direct or indirect way) the comprehensive city productivity and thus the city prosperity.

Common metrics about impacts on tourism sector include the number/percentage of visitors, duration of stay, means of transportation, etc. These data are then used to define new jobs produced, tax generation, expenditure per day, etc. (Rypkema and Cheong, 2011).

These indicators are useful for policy makers because they provide valuable information about the economic impacts; therefore, they can contribute to orient strategic choices. Important indicators for policymakers to determine economic

significance of conservation projects are the number of new jobs and the contributions to household income.

It is significant to note that the tourism economy is the one that has the greatest number of indicators and data, but actually it represents only a part of all benefits. The tourism sector alone is no guarantee of the preservation and development of the Historic Urban Landscape. In fact, in some case studies the increase of the number of tourists is strictly related to a decrease of the residents. Therefore, investments should not have as main goals the increase of tourism, but the improvement of residents living conditions that, in turn, in a circular vision, are a source of tourist attraction: life quality and tourist attractiveness are, therefore, in a symbiotic and circular relationship.

It is important to highlight that the contribution of cultural heritage to the economic development does not end in the tourism economy.

Tab. 8 – Indicators: Tourism and recreation indicators

Category	Indicator	Unit of measure
Touristic Demand	N. of visitors per year (or per day)	n./year (or day)
Touristic Demand	N. of visitors staying overnight	n./year
Touristic Demand	N. of tourists per business per day to restaurants, cafes, shops	n./day
Touristic Demand	Visitors' expenditure	€/day; €/year
Touristic Demand	Visitors average length of stay	n.nights/person/year
Touristic Demand	Percentage of tourists on repeat visit to the city	%
Touristic Demand	N. of one-day trips	n./year
Touristic Demand	Occupancy rate of touristic units	%
Touristic Demand	Average growth rate of number of visitors	%
Touristic	Growth rate (or number) of nights	% (or n.)

Demand	spent by tourists	
Touristic Demand	Percentage of crowding in restaurants	%
Touristic Demand	Average number of daily users in stores	n./day
Touristic Demand	Average daily expenditure of users in stores	€/day
Touristic Demand	Average number of daily users in restaurants	n./day
Touristic Demand	Average daily expenditure of users in restaurants	€/day
Touristic Demand	N. of tickets sold for touristic place of interest	n./day (or year)
Touristic Demand	Percentage (or number) of national tourists	% (or n.)
Touristic Demand	Percentage (or number) of international tourists (internationalization)	% (or n.)
Touristic Demand	Number of airline passengers	n./years
Touristic Supply	N. of airlines operating at the airport	n.
Touristic Supply	Percentage of fixed assets related to the tourism sector	%
Touristic Supply	Average annual growth in touristic units and rooms	%
Touristic Supply	N. of new touristic shops	n/year
Touristic Supply	Growth of catering sector	%
Touristic Supply	Percentage of increase in number of guided tours	%
Touristic Supply	N. of hotels/ touristic accommodation	n.
Touristic Supply	N. of hotel rooms	n.
Touristic Supply	N. of hotel beds	n.
Touristic Supply	Average room price	€/day
Touristic Supply	N. of new travel agencies	n.
Touristic Supply	N. of new public underground parking lots	n.
Touristic Supply	Admission price in touristic place of interest	€
Economic value	Average growth of touristic sector	%
Economic value	Total value of tourism sector	€
Economic Vitality	Additional investment for improving/building new touristic units	€
Economic Vitality	Average lifespan of touristic companies	%

Economic Vitality	Percentage of formal/informal activities	%

Source: Case studies (see annex A)

3.5.2 Creative, cultural and innovative activities

This category is referred to the impacts produced by HUL conservation/regeneration on creative, cultural and innovative activities.

Cultural activities are referred to activities that embody and convey cultural expressions. Besides the traditional arts sectors (performing arts, visual arts, cultural heritage, etc.), these activities are also referred to services and goods as film, music, books and press, DVD, video, television and radio, video games, new media.

This category includes historic and artistic heritage (cultural heritage) and content, information and communications industry (publishing, cinema, advertising, television and radio) where the integration of high tech is a common thread.

Productivity, competitiveness and attractiveness of cities and regions are improved through innovations (Florida, 2002), based on local resources, that is, on human and social capital (table 9). In the case studies analyzed indicators about use of ICT related to knowledge and use of cultural heritage did not emerge. The ICT impacts on cultural heritage are considerable and therefore they require indicators to monitor benefits produced by them. Cultural heritage can be an incubator of innovation and entrepreneurship.

Tab. 9 – Indicators: Creative, cultural and innovative activities

Sub-category	Indicator	Unit of measure
Cultural Demand	Percentage of visitors stay for temporary cultural events	%
Cultural Demand	N. of visitors for cultural reason	n./year
Cultural Demand	N. of participants in cultural events	n./year
Cultural Demand	N. of schoolchildren taking part in the cultural	n./year

	events	
Cultural Demand	N. of visitors to museums	n./day
Cultural Demand	N. of licences granted in retail and services for artisans	n./year
Cultural Supply	N. of cultural events per year	n./year
Cultural Supply	N. of cultural institutions	n.
Cultural Supply	N. of cultural facilities	n.
Cultural Supply	N. of cultural enterprises	n.
Cultural Supply	N. of new start-ups	n.
Cultural Supply	Percentage of citizens satisfied of cultural facilities supply	%
Cultural Supply	Percentage growth rate of cultural events	%
Cultural Supply	Percentage growth rate of creative activities	%
Cultural Supply	N. archives	n.
Cultural Supply	N. libraries	n.
Cultural Supply	N. movie theatres	n.
Cultural Supply	N. art galleries	n.
Cultural Supply	N. museums	n.
Cultural Supply	N. theatres	n.
Cultural Supply	N. artists	n.
Economic Vitality	Attraction of new investments in Cultural Heritage/cultural events	€
Economic Vitality	Additional investment for new cultural programmes	€
Creative Firms	N. of antique stores/second hand bookshops	n.
Economic impact	Economic impact generated by cultural events	€
Employment	N. of artists taking part in cultural activities	n./year

Source: Case studies (see annex A)

3.5.3 Typical local productions

Craft and traditional products represent an important sector in Historic Urban Landscapes (table 10). Despite their usually are small size, firms that sell typical local products locally may boost economic growth in the city.

The capacity to promote local production is an important element to improve the endogenous development of city systems, considering the significant impacts (economic, social, tourist, etc.) that it can produce. Through the enhancement of typical local products, in fact, merely productive function is integrated with other functions, including environment safeguard and conservation of culture, producing, at

the same time, spaces and places of economic and social dynamics (Belletti and Berti, 2011).

The valorization and promotion of local products represents a goal not only for economic actors but also for public administrators. The latter identify local production as a central element of an overall strategy for local development which includes cultural conservation of productive traditions.

The typical products are in fact the result of local activities of small scale, which have particular characteristics due to the combination of local raw materials and traditional production techniques.

Local resources can be tangible or intangible magnets for touristic flows. They can be the engine of local economy (also attracting visitors) and, at the same time, expression of local culture. Local production places oneself as a cog in the tourist sector; in fact, it can become an added value for the attractiveness of tourism.

Typical local production, for example craft products or gastronomy, can be a motivational and promoter factor of business in the territory. This means that a typical food product can convey demand for tourism and animate the holiday, becoming feed for local economy. Gastronomic experience is both a mean of knowledge of the city and a link between the production chain and tourism industry, thanks to generation of relationships/synergies among operators: producers, typical shops, accommodation and recreation activities, tour operators, etc.

The typical products, closely linked to local specificities, represent a point of contact between the authenticity of a territory and the tourist.

Local specialties, representing the local identity, are able to impart values of the community, also through effective promotion and communication strategies. Identity values of the territory are expressed also through the product, considering the strong link between the product and its place of origin.

Companies, in particular smaller size, see in the typical products a chance to find a new competitive space against increasingly competitive markets by price.

On the other hand, local governments are interested in local production seeing in it a mean to strengthen identity and social cohesion, stimulating synergies and bonds.

Attention to local production (in particular gastronomy) is supported by the increasing community attention on food quality and by the desire to promote and pass on local traditions. Typical products are normally perceived by consumers as more natural and more environmentally friendly because they are associated with activities producing lower environmental impacts than industrial ones, as well as with raw materials and production techniques that are more respectful of natural balance.

The capacity of local products to enhance identity and local culture leads to the creation of new networks of social relationships which orient local development choices and strategies.

Therefore, the typical products, as a form of expression of culture, have impacts on social and economic development of a territory, producing benefits such as increasing in income of small producers, increasing in social vitality, regeneration of traditional activities, new jobs, etc.

Indicators related to this category, emerged from the case studies, are listed in the following table.

Tab. 10 – Indicators: Typical local production indicators

Sub-category	Indicator	Unit of measure
Employment	N. of artisan units	n./year
Creative Firms	N. of new handcraft shops	n./year
Creative Firms	N. of craft producers	n./year
Creative Firms	N. of craft stores	n./year
Production of Goods	N. of new industrial activities (local production)	n./year
Production of Goods	Annual growth rate of traditional production	%
Production of Goods	Selling price of traditional products (without VAT)	€
Typical Productions		
Production of	Net present value of economic activity	€

Goods Production of Goods	Internal profit rate of economic activity related to local production	%

Source: Case studies (see annex A)

3.5.4 Environmental and natural capital

The relationship between cultural heritage conservation and environmental and natural (table 11) capital is another identified category.

Indicators related to the environmental benefits are rarely presented in the analysis of impact of investments in cultural heritage. It denotes a lacking of awareness about the real benefits that these investments are able to produce in these categories.

Economic indicators related to this category are often express as money saved, rather than money gained as for the other categories (i.e. property values, earning).

A report about investments in Maryland highlights, for example, that 387,000 tons of material from landfills have been saved investing in historic properties over the past 12 years ("this amount of landfill material is the equivalent of filling a football stadium to a depth of 50-60 feet - Cronyn J. and Paull P., 2009)

Indicators about environmental benefits are mainly referred to measurements of land saving use due to building reuse (rather than demolished) and the reduction in CO2 emissions thanks to restoration of a building rather than rebuilding it.

Most benefits about this category are indirect, so they are expressed in terms of "avoided costs" (reduction of energy consumption, waste reduction, etc.).

The World Bank recognized the investments in cultural heritage as a good solution to reduce the CO_2 emission and climate change because activities related to cultural heritage represent an intrinsically more sustainable model of land use, consumption and production that has been developed over the time through a continuous adaptation between communities and their environments (UNESCO, 2013).

Thereby, cultural heritage can help to face climate change challenges for example "through the protection and revitalisation of the huge embedded energy in the historic building stock" (CHCfE Consortium, 2015).

Therefore, the indicators extracted from case studies should be integrated also with indicators related to the avoided costs due to the improvement of health conditions.
As above mentioned, most of case studies are lacking in these indicators, demonstrating the lack of awareness regarding benefits that cultural heritage conservation/regeneration can produce for the environment. But the lack of data does not imply the absence of such benefits.

Tab. 11 – Indicators: Environment and natural capital

Sub-category	Indicator	Unit of measure
Environment preservation	Attraction of new investments in ecosystem preservation	€/year
Environment preservation	Avoided damages from land preservation	€
Environment preservation	Benefits from preservation of agricultural land (ecosystem services)	€
Environment preservation	Attraction of new investments for enhancement of green areas	€
Environment preservation	Avoided cost of traffic congestion (due to the enhancement of public transport)	€ / year
Environment preservation	Avoided cost of traffic congestion per resident (due to pedestrian and bicycle routes)	€ / year
Environment preservation	N. of automobiles daily entered in the historic center	n./day
Green space supply	Percentage of citizens satisfied of green spaces	%
Pollution Reduction	Attraction of new investment in infrastructure to reduce pollution	€
Pollution Reduction	Amount of raw materials- water, etc. savings	Quant/ year
Pollution Reduction	Reduction of costs related to waste disposal	€/year
Pollution Reduction	Reduction of costs related to natural hazards disaster	€/year

Source: Case studies (see annex A)

3.5.5 Community and social cohesion

Indicators related to social cohesion are almost absent in the analysis of the sustainability of the cities. There is still a lack of evidence about the contribution of the heritage to the community and social cohesion (tab. 12). A detailed analysis about social impacts of heritage conservation has been elaborated in England starting from the use of lottery funds for heritage conservation (Rypkema and Cheong, 2011). This study includes several community surveys and focus groups supporting hard data about cultural heritage investments.

Cultural heritage has positive impacts on social capital, revitalizing synergies, bonds and collaborative relationships. It is able to encourage associations, crowdfunding projects, etc. that contribute to local economic productivity. New forms of economy (crowdfunding, municipal bonds, et.) should support the traditional one.

Cooperative and collaborative relationships, improving the quality of life, make the landscape more attractive. There are very few case studies in which indicators related to this category emerge. These indicators could be successfully applied to Historic Urban Landscape, as some experiences show. For example, the experience of Portico of Bologna shows how cultural heritage regeneration is able to produce both economic and social benefits, in terms of social cohesion (www.unpassopersanluca.it).

Cultural heritage is able to build social capital and to contribute to social cohesion providing a framework for participation and engagement and also fostering integration (CHCfE Consortium, 2015). It is fundamental for people wellbeing as it expresses values and identity and organizes communities and their relationships through its powerful symbolic and aesthetic dimensions.

The preservation of diversity of cultural heritage, and also an equitable access to it and a fair sharing of benefits related to it, enhance the sense of belonging; the capacity to maintain the common good contribute to social cohesion reducing, at the same time, inequalities.

Local community has a key role in the cultural urban landscape approach. The interaction between local and expert knowledge is a prerequisite for implementing

the UNESCO approach and thus it needs to stress the importance to evaluate this specific category of indicators.

The number of voluntaries highlights that residents give much importance to local culture, considering it as important contribution to their quality of life.

Tab. 12 – Indicators: Community and social cohesion

Sub-category	Indicator	Unit of measure
Social Cohesion	N. of volunteers	n./year
Social Cohesion	N. of volunteer hours	n./hours
Social Cohesion	N. of events supported by volunteers	n./year
Social Cohesion	New funds to support activities of non-profit organizations	€/year
Social Cohesion	Percentage (or number) of non-profit organization	% (or n.)
Social Cohesion	N. of associations	n. /10000 inhab.
Social Cohesion	N. of social centers	n.
Social cohesion	Donations for cultural heritage	€
Social cohesion	Percentage of citizens considering cultural events national pride reason	%
Sharing/ Collaborative Economy	Municipal Bonds/Crowdfunding incomes for heritage projects	€
Sharing/ Collaborative Economy	N. of new cooperative enterprises	n. /10000 inhab.
Sharing/ Collaborative Economy	N. of participants in crowdfunding initiatives	n.
Sharing/ Collaborative Economy	Amount of money crowdsourced through crowdfunding campaigns	€

Source: Case studies (see annex A)

3.5.6 Real estate

The indicators about the real estate category (table 13) are, as for tourism category, more known because the related impacts are more immediate and obvious, especially in the short term. The real estate benefits are direct benefits for owners and, at the

same time, they turn into tax impacts for public. Cultural heritage is able to generate tax revenue for public bodies. Some indicators extracted from case studies are unclear because they are not immediate to quantified (i.e well-preserved buildings); so they need to be more specified.

Real estate is positively influenced by investments in cultural heritage: usually the project areas and the surrounding areas revealed an increase in real estate value.

Sometimes this increase can have negative impacts, such as gentrification phenomenon: local community and young people can no longer afford to buy/rent apartments because of rising prices; therefore, as emerged from some case studies, many apartments remain unused for many years, and the owners do not care about maintenance, causing the deterioration of them. Furthermore, the increase in property values produces a “touch and go” tourism because of the high prices to stay in the area object of intervention. Thereby, these processes could contribute to increase spatial and social inequalities within the dynamic urban system.

Negative impacts are related also to the potential congestion of public spaces and infrastructures, but also regarding inflationary processes, both in commercial services (shops, restaurants or even cultural venues) and in the real estate market.

In order to limit negative impacts due to increase in tourism, the latter cannot be the only objective of a project. If you do it for the locals, the tourist will come; if you do it for the tourist, only the tourists will come (Rypkema, 2003; 2010).

The analysed case studies show that continuing to use the buildings is an effective strategy to prevent their deterioration. In the re-use/regeneration of historic buildings lies a huge economic potential in terms of employment. While respecting its identity, but maximizing the economic potential of adaptive reuse, “keeping alive” a historical building is an effective strategy to protect it.

Furthermore, the increase of real estate value (benefit for the owners) results in increased tax revenues for the public sector.

As above mentioned, indicators related to increase in employment and household income are important for policymakers. Instead, data related to property values speak strongly to homeowners about economic impacts of investment in conservation.

Tab. 13 – Indicators: Real estate

Sub-category	Indicator	Unit of measure
Real Estate Values	Average price of properties	€/sqm
Real Estate Values	Percentage of increase in private land/ properties value	%
Real Estate Values	Percentage of increase in value of properties after historic designation	%
Real Estate Values	Percentage of increase in public land/ properties value (due to infrastructure development)	%
Real Estate supply	N.(or %) of residences	n. (or %)
Real Estate supply	N. (or %) of office spaces	n. (or %)
Real Estate supply	N. (or %) of commercial units	n. (or %)
Real Estate Values	Increase in value of surrounding buildings	€/sqm %
Real Estate Values	Rent values for commercial-use properties	€/sqm/month
Real Estate Values	Rent values for residential properties	€/sqm/month
Real Estate Values	Average monthly rent	€/sqm/month
Real Estate Values	Average market value	€/sqm
Real Estate Values	Volume of transactions in the real estate market	€
Real Estate development	N. of new residential units	n./year
Real Estate development	Square feet of commercial development	Sq. feet
Real Estate development	N. of new construction activities and new permits	n./year
Real Estate development	N. of change of use of properties	n./year
Real Estate development	N. of new construction/rehabilitation	n./year
Real Estate development	Percentage of ownership house/commercial units	%
Real Estate development	Percentage of rented house/commercial units	%

Real Estate development	Housing/properties vacancy rate	%

Source: Case studies (see annex A)

3.5.7 Financial return

Investments in cultural heritage are able to generate financial returns, stimulating real economic growth that creates sustainable prosperity (table 14).

They can express in terms of increase in taxes due to commercial/residential development and tourist flow. They are also related to the avoided expenditure for management and maintenance of cultural heritage due to the increasing in private investments. Taxes related to new activities and businesses started up thanks to cultural heritage regeneration represent a significant public financial return.

Although these indicators are identified in the case studies, they are often not then quantified.

Tab. 14 – Indicators: Financial return

Sub-category	Indicator	Unit of measure
Real Estate	Property taxes gained from commercial development (municipal)	€
Real Estate	Property taxes gained from commercial development (provincial and federal)	€
Real Estate	Increase in municipal taxes	€/year %
Real Estate	Increase in taxes related to real estate assets	€/year %
Real estate	Increase in incomes due to construction permits	€/year %
Real estate	Avoided expenditure for management and maintenance of cultural heritage due to increase in private investments	€
Selling	Increase in earnings due to tickets selling	€/year %
Selling	Increase in earnings due to tourist services	€/year

	selling	%
Tourists flow	Increase in taxes related to tourist flows/ Receipts from the tourist tax	€/year %
Social care	Reduction of costs related to social care	€
Social care	Reduction of costs related to public services	€
Social care	Reduction of costs related to medical expenditure	€
Revenue	Increase in taxes related to activities in each sector (all categories - tourism, real estate, etc.)	€
Revenue	Revenue due to municipal investment	€
Revenue	Total local tax revenues supported by direct expenditures on historic preservation - investments	€
Revenue	Tax revenues from businesses/sales	€
Revenue	Increase in additional regional GDP (by sector)	€/year
Revenue	Civil insurance to be paid from hotel to be formal and legal	€/year
Revenue	Return to local economy for every €1 invested by the regional authorities	€
Employment	Increase in taxes related to new employment in the sector (all categories - tourism, real estate, etc.)	€
Employment	Reduction of costs related to unemployment in the sector (all categories - tourism, real estate, etc.)	€

Source: Case studies (see annex A)

3.5.8 Wellbeing

In a period characterized by a considerable unsustainability, the evaluation of wellbeing assumes a central role and human well-being can be recognized as the ultimate goal of sustainable development.

According to this goal, all governments should ensure wellbeing, both individual and collective. It is not related only to the economic wealth, but also to the condition able to ensure social cohesion, human rights fulfilment, human needs fulfilment etc.

In this perspective, to understand the linkage between the variation of landscape and the variation of wellbeing becomes a relevant issue.

First of all, it is necessary to define the concept of wellbeing. Before evaluate, it needs to define.

Wellbeing is a multidimensional concept that changes in the spatial and temporal dimension. It changes in time, place and culture. So it is difficult to define it in a univocal way.

Despite the health dimension, principally associate to the medicine and that have always the same parameters, the wellbeing dimension involves dynamic characteristics. So, in order to define the wellbeing dimension, it is important to understand the context in which people live. The context in which people live is important to define their wellbeing because there are different factors that can interfere with each other and influence it. In order to orient decision makers towards the achievement of wellbeing, it is fundamental to understand how to assess it.

A framework of indicators has been developed by the initiative “Beyond GDP” by European Commission (www.ec.europa.eu) This initiative aims to identify indicators clear and appealing as GDP but, at the same time, more inclusive, considering environmental and social aspects of progress. The aim is to integrate the “traditional economic indicators” with indicators able to capture the multidimensional aspects of wellbeing. The following set of indicators are part of this international debate: Canadian Index of Wellbeing, Capability Index, EU set of Sustainable Development Indicators, European Benchmark Indicators, Genuine Progress Indicator, Happy Planet Index, Human Development Index, Index of Individual Living Conditions, JFS Sustainability Vision and Indicators, MDG Dashboard of Sustainability, Millennium Development Goals Index, Sustainable National Income, Time Distance Method of Analysing and Presenting Indicators, World Happiness Index, National Accounts of Well-Being.

A first consideration could be about the wellbeing dimensions that Italian National Institute of Statistics (ISTAT) identified and analysed in the BES and URBES Reports (ISTAT, 2015a; 2015b). The Equitable and Sustainable Wellbeing (BES) is an analysis of the factors (economic, social and environmental) that contribute to the

quality of life and it is articulated in 12 sectors (wellbeing dimensions) and 130 indicators.

These reports (BES and UrBES) are part of the international debate about “beyond GDP” and the “need for broader measures of progress to complement gross domestic product” (United Nation, 2015b). Their purpose is to produce a set of multidimensional indicators able to evaluate the wellbeing. They achieve to integrate the “traditional economic indicators” with indicators related to the quality of life that consider equity and sustainability issues able to give a more complete point of view about the society development.

The aim of ISTAT is to support the debate «beyond GDP», trying to put together social, economic, environmental and good governance aspects, fundamental to achieve the wellbeing.

The wealth of the society was for too long linked to the increase of GDP. It represents an important economic indicator able to evaluate the wealth of a society and this linkage – between GDP (gross domestic product) and wealth of society - is a common belief based principally only on the idea of “economic growth”. Nevertheless GDP is not able to capture the multidimensional aspects of wellbeing. It does not represent people wellbeing (Stiglitz *et al.,* 2009): it needs to go beyond the mere economic number. Economics should be only instrumental to the achievement of wellbeing. GDP is too an oversimplification measure that leaves out many aspects that are not economically evaluable: it is not able to capture information about wellbeing or about happiness and the level of the life quality of population.

The above mentioned considerations and the shift towards the new paradigm (Hosagrahar *et al.,* 2016) require an overcoming of this assumption. So, in this perspective the need of new indicators emerges.

The issue related to the evaluation of wellbeing is assuming a central role in the current debate. It is important to evaluate the wellbeing through multidimensional approaches, able to take into account for example the aspects of subjective evaluation of citizens.

In the ISTAT reports 12 dimensions of wellbeing are considered: health, education and training, work and reconciling life times, material well-being, social relations, politics e

institutions, safety, subjective well-being, landscape and cultural heritage, environment, research and innovation, quality of services. 134 Indicators are grouped in these 12 categories.

Another tool considered in the present research to implement this category is the Better Life Index (www.oecdbetterlifeindex.org), an interactive tool launched in May 2011 by the Organisation for Economic Co-operation and Development. The effort of this tool is to bring together internationally comparable measures of well-being in line with the recommendations of the Commission on the Measurement of Economic Performance and Social Progress also known as the Stiglitz-Sen-Fitoussi Commission.

Through this tool it is possible to compare different countries in terms of what makes for a better life. It includes 11 dimensions of wellbeing: Housing, Income, Jobs, Community, Education, Environment, Civic Engagement, Health, Life Satisfaction, Safety, Work-Life Balance. Each of them includes, in turn, three indicators.

The OECD and ISTAT indicators could be considered in the seventh category (wellbeing category) of the proposed evaluation framework (table 14). Because of the complexity of the notion of wellbeing and its subjectivity (wellbeing is perceived), it is difficult to identify general shared indicators.

In the common belief wellbeing is associated to a good quality of life. It is a true assumption, but quality of life is not the only indicator of wellbeing. Wellbeing is associated to a comfortable, healthy, happy life and life quality affects this state. Life satisfaction is another of the different indicators used (in combination with others) to assess the wellbeing.

The binomial “landscape-wellbeing” is assuming a central role in the international debate related to the sustainable development (Duxbury, 2016; Hosagrahar et al., 2016; ISTAT 2015a; ISTAT 2015b).

Landscape is important for our wellbeing and it is intuitive: we unconsciously search for a place able to communicate to us a sense of harmony, balance, liveliness. At the same time, we usually get away from places that communicate untidiness.

An important factor of landscape is also its identity. A landscape is “good” if it is recognizable and it is “bad” if it has elements not recognizable as identification of that place, but they seem extraneous to it.

Aesthetic value can contribute to the well-being but, at the same time, it is the most subjective and personal value. But considering a landscape only as a source of aesthetic enjoyment is an oversimplification. It can also produce wellbeing or illness according to other aspects more complex and less immediately perceptible; the quality of landscape depends on aesthetic factors and also on aspects related to all landscape values, identity, etc. It is not only related to a visual perception (D'Auria and Monti, 2013). In the landscape the signs of the past are stratified, in a constantly changing. The landscape keeps the signs of the evolution of the relationship between man and environment and its history. This relation impacts on our wellbeing "communicating" to us a sense of belonging, security, etc., contributing to individual and collective wellbeing.

A good landscape produces a sense of well-being, a bad landscape produces illness. The landscape also affects our actions and our choices. To a healthy landscape correspond attractiveness capacity, economic and social dynamics, etc., while to an ill landscape correspond relocation, degradation, etc.

It is also important the economic dimension of the binomial landscape-wellbeing. A good landscape has repercussion also on the economic field: a beautiful and interesting place, for example, attracts tourists, investors, etc. A good quality landscape is an attractor for localization of cultural services, art galleries, museums, theatres. Also the intangible landscape, human and social landscape, has a central role in local development, arising cooperative capacity, synergies and symbioses (Fusco Girard, 2013). Empirical evidence shows also the relationship between landscape quality and goods and services demand/sale; in/for a good landscape there is also a more willingness to pay.

Cultural heritage is integral part of life of communities and it is involved in social, economic and environmental processes. It is expression of culture, identity and religious beliefs of societies.

If we are able to conserve Cultural Heritage, we construct memory of ourselves and therefore we are able to conserve identity in the globalization changes. Conservation expresses the deliberate effort to fix the memory in time to avoid losing our identity.

We can react to the risk of losing our identity (as a result of globalization) through Cultural Heritage. We fix the memory through Cultural Heritage that has been handed down and, in turn, we pass it on the future generations.

For this reason, all actions achieved to protect and improve the environmental, social and economic wellbeing of communities should take into account cultural heritage, the opportunities it offers and threats due to an inappropriate use.

People participation in local cultural activities, such us music, dance, theatre, etc. contributes to the improvement of their wellbeing and quality of life (Duxbury *et al*., 2016). Community participation in cultural activities fosters wellbeing.

There is no much empirical evidence about contribution of cultural heritage to the achievement of wellbeing. This contribution is related both to the dimension of cultural heritage related to identity, sense of belonging, etc. and to the mere functional dimension related to its use. Both of them are important to the achievement of sustainable development with particular referee to the wellbeing categories.

Cultural heritage contributes to bettering urban life in different way. For example providing options for housing (through reuse etc.), to improve public spaces, etc.

Here below some wellbeing indicators (extracted from URBES indicators and Better Life Index), that could be considered related to the cultural heritage conservation projects, are listed.

For these reasons, wellbeing indicators will be used to measure people's general satisfaction with life and to give information about quality of life with reference to jobs, family life, health conditions, and standards of living.

Wellbeing indicators are also related to safety perception. This indicator is fundamental in a regeneration process because it is not related to the regeneration of space, but it is related to human landscape. Thereby, this indicator assumes a strong significance.

Well-being measures can be both "subjective" and "objective". The subjective indicators are based on self-reporting by individuals, while the objective ones are used to capture life-satisfaction perception by looking at some variables, as leisure time and disposable income.

Employment is a key word related to wellbeing concept. It contributes to make people "feel good", not only because of economic aspects, but because it let people be in relationship each other. Projects should aim to improve human life conditions; in this perspective economics and technologies have to represent a mean (and not a goal).

Tab. 14 – Indicators: Wellbeing

Sub-category	Indicator	Unit of measure
Employment	Employment rate	%
Employment	Youth employment rate	%
Employment	Unemployment rate	%
Employment	Youth unemployment rate	%
Employment	N. of businesses in historic center	n./year
Employment	N. of new jobs (temporary or permanent)	n.
Employment	N. of workers	n./year
Employment	Percentage of employed population related to tourism sector	%
Employment	Average number of jobs in touristic activities (hotels, restaurants, shops)	n./year
Employment	Monthly salary	€/month
Employment	Jobs created in the short term in cultural activities	n.
Employment	Employment in activities related to typical local production/distribution	% n.
Employment	Growth of employment within real estate and neighbourhood development	%
Economic well-being	Percentage of hotels' contribution to tourism sector income	%
Economic well-being	Percentage of hotels' contribution to tourism sector total revenues	%
Economic well-being	Average income	€
Economic well-being	Percentage (or n.) of residents in low-income households	% (or n.)

Housing quality	Percentage of people living in homes without toilet of total resident persons	%
Education and training	Percentage of young people attending school	%
Security	N. of murder	n./100000 inhab.
Security	N. of heft in dwelling	n./100000 inhab.
Security	N. of pickpocketing	n./100000 inhab.
Security	N. of robberies	n./100000 inhab.
Security	Perception of personal safety	Qualitative
Security	Percentage of citizens feeling safe in the city	%
Research and innovation	N. of patents	n./100000 inhab.
Research and innovation	Percentage of specialization in knowledge-intensive technological of workers in productive sector (for 100 employees of local units)	n./100 workers
Quality of services	Percentage of citizens satisfied with health services (and other services)	%
Quality of services	Cycle paths	km per 100 km2
Quality of services	Pedestrian areas	sqm/ 100 inhab.
Quality of services	Homes with basic sanitation facilities	N. %
Social Care	Number of individuals receiving social care	n. /10000 inhab.
Social Care	Percentage of citizens agreed that the city is a healthy place to live	%

Source: Case studies (see annex A)

3.5.9 Cultural value of properties/landscape

The indicators of this category are mainly referred to the state of conservation of landscape (table 15).

As underlined in the previous paragraphs, the cultural value of properties /landscape is a category considered as a complex indicator. It is based on the application of the Heritage Impact Assessment method.

A place that keeps intact as possible its historical and cultural asset is able to attract at the same time the permanence of the resident population, to strengthen the sense of belonging of citizens, to increase civic and individual attention to safeguarding. It is also able to trigger virtuous mechanisms for attracting tourist flows that feed the overall economic well-being.

Tab. 15– Indicators: Cultural value of properties/landscape

Sub-category	Indicator	Unit of measure
State of conservation	N. of well-preserved buildings	n.
State of conservation	Percentage of well-preserved buildings	%
State of conservation	N. of buildings in poor condition	n.
State of conservation	Percentage of buildings in poor condition	%
State of conservation	N. of buildings in ruin	n.
State of conservation	Percentage of buildings in ruin	%
State of conservation	Percentage/number of improper housing	% n.
State of conservation	Percentage of citizens satisfied of historic buildings quality	%
State of conservation	Percentage of used historic building	%
State of conservation	Percentage of vacant historic building	%
State of conservation	Visitors' Willingness to make a one-time contribution to Heritage Restoration	%
State of conservation	N. of historic properties/district designated to be of cultural heritage value or interest	n.
State of conservation development	N. of restoration and adaptation works undertaken on historic buildings	n./year
State of conservation	Re-functionalization of historic buildings	%

Source: Case studies (see annex A)

3.6 Considerations

There are some consideration emerged from the analysis of case studies. Analysing indicators, it needs to understand if produced benefits are actually the result of the investment made. It is not easy to linearly link the investments on cultural heritage and impacts because these cannot be the result of actual investments but of external factors. For example, they can be the effect of changes in national legislation that help (or hinder) the location of local economic activities, migration of populations, surrounding road infrastructure, etc. To better understand the relationship between investment and benefits can be useful to use workshops, focus groups and analysis of additional case studies.

Moreover, all indicators, in order to express a benefit, should express an increase. So, each of them should be identified in terms of "increase in ..." (increase in number of visiting tourists, increase in sales of souvenir shops, increase in salaries, etc.).

The benefits arising from the analysed case studies cannot be all converted into cash. Some of them, instead, can be converted into cash only proceeding by trial and error, making assumptions on the quantities. In addition, some of data deduced from the case studies have no time reference pre- and post-project and, therefore, they cannot identify a real benefit.

In order to evaluate the effectiveness of an intervention, it is possible both to use indicators relating pre- and post-intervention and to compare indicators referred to the area of intervention with indicators related to a "control area" (an area with similar characteristics but that is not subject of any investment).

It needs to identify indicators both in the short and medium-long term, whether direct, indirect or induced.

It needs to select the most appropriate indicators case by case. An excessive number of indicators surely allows to better measure and integrate "dynamism" of the change; on the other hand, however, the reduction of the indicators could simplify the complexity of the assessment process.

The indicators can be related to different scales but, to better understand the contribution of cultural heritage to urban productivity, the most appropriate scale is the local one.

There are some indicators that occur more frequently in the different case studies. This is because those indicators are related to aspects for which information are more easily accessible or are related to benefits that are more immediate.

Some problems have been encountered analysing the data from case studies. Most of data are not comparable because they are referred to different time intervals. A lot of data cannot be aggregated. Sometimes data are lacking, other times there is not the same data referred to pre- and post- project period. It is not possible to understand the benefit through absolute value of indicators.

Furthermore, when the cost of intervention is not known, it is not possible to be sure that the indicators represent a benefit.

The community participation in funding directly projects (and not through taxation) has not only economic impacts; it can produce new social relationships, stronger bonds with the place, thus Social Complex Value (Fusco Girard, 1986).

The indicators related to the regeneration projects based on collaborative relationships could be valuable indicators of economic and social vitality of a city.

Therefore, there are some indicators that, although they do not emerge from case studies analysed, can be considered for evaluating the multidimensional impacts of HUL valorization/regeneration. They are mainly related to social cohesion category: number of HUL regeneration project financed through municipal bonds;

- number of released bonds;
- area of HUL regenerated through municipal bond/crowdfunding project;
- community participation to the common goods management;
- number of crowdfunding project launched;
- number of crowdfunding project completed;
- average donation per person; number of “reward” allocated;
- number of local company involved;
- number of banking and community foundations.

Considering the circular perspective discussed in the previous chapter, same indicators can be proposed:

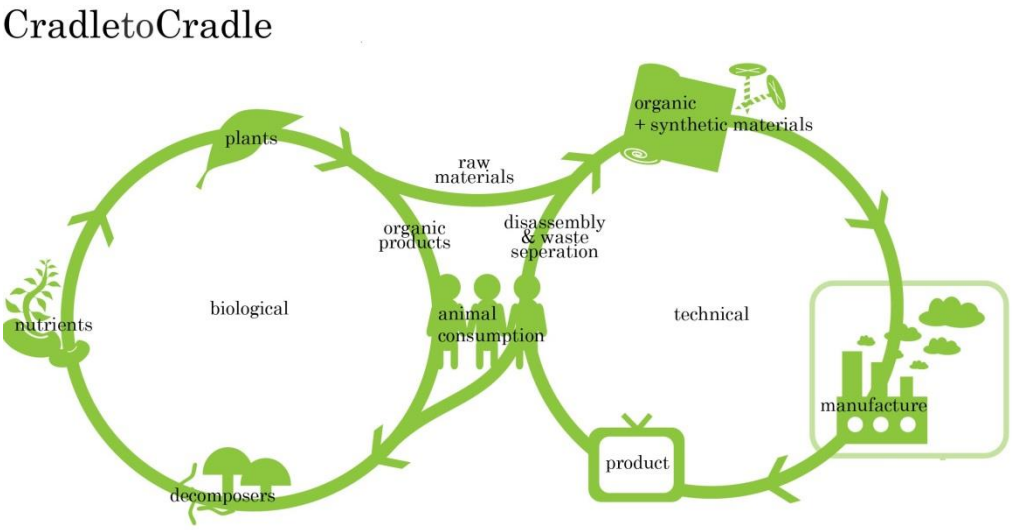
- number of symbioses;
- number of synergies;

- number of units involved in circular processes;
- ratio between the total of saved material and the total consumed material.

These indicators are obviously linked to all categories and their assessment contributes to evaluate the “level of closing loops” (and thus the productivity).

The transition towards a circular model necessarily requires the implementation of indicators to assess and monitor its efficiency, related both to increase in material productivity and non-material one (relationships, bonds, etc.).

4. A CIRCULAR MODEL FOR INCREASING URBAN PRODUCTIVITY



Source: McDonough, W. & Braungart, M. (2008). Cradle to Cradle: Remaking the Way We Make Things

4.1 Introduction: the circular economy principles

The challenges that cities are facing today require the identification of new models (economic, social, etc.). It is necessary to identify development models to operationalize sustainable development principles in the cities.

The circular model, based on the principle that in nature nothing is "waste" and everything can become a "resource", can be used to operationalize sustainable development principles. It represents a model that can be taken into account to achieve these objectives.

The circular economy can be defined as *"restructuring the industrial systems to support ecosystems through the adoption of methods to maximize the efficient use of resources by recycling and minimizing emissions and waste"* (Preston, 2012).

The circular economy, that provides multiple value-creation mechanisms, is based on three principles (Ellen MacArthur Foundation, 2015):

- Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows – for example, replacing fossil fuels with renewable energy or returning nutrients to ecosystems.
- Optimise resource yields by circulating products, components, and materials in use at the highest utility at all times in both technical and biological cycles – for example, sharing or looping products and extending product lifetimes.
- Foster system effectiveness by revealing and designing out negative externalities, such as water, air, soil, and noise pollution; climate change; toxins; congestion; and negative health effects related to resource use.

So, the circular economy aims to minimize waste and to preserve natural capital, using renewable sources of energy. It is important to study the loops of the system in order to optimize the production and to know every actor that can be involved in the process.

The three above-mentioned principles can be translated into "six business actions" (Ellen MacArthur Foundation, 2015):

- *Regenerate:* Shift to renewable energy and materials; reclaim, retain, and regenerate health of ecosystems; and return recovered biological resources to the biosphere.
- *Share:* Keep product loop speed low and maximise utilisation of products by sharing them among users (peer-to-peer sharing of privately owned products or public sharing of a pool of products), reusing them throughout their technical lifetime (second-hand), and prolonging their life through maintenance, repair, and design for durability.
- *Optimise:* Increase performance/efficiency of a product; remove waste in production and the supply chain (from sourcing and logistics to production, use, and end-of-use collection); leverage big data, automation, remote sensing, and steering.
- *Loop:* Keep components and materials in closed loops and prioritise inner loops.
- *Virtualise:* Deliver utility virtually – books or music, online shopping, fleets of autonomous vehicles, and virtual offices.

- *Exchange:* Replace old materials with advanced non-renewable materials; apply new technologies (e.g. 3D printing and electric engines); choose new products and services (e.g. multi-modal transport).

As Ezzat (2016) highlights, there are seven basic main concepts from which circular economy model is deduced:

- *Greening the economy:* The United Nations (UN) have set this concept to face up sustainable development challenges minimizing unsustainable consumption. During the global economic crisis in 2008, governments realized that incentivizing (through specific regulatory systems or tax policies) actions aimed at environmental improvements can be useful to reach the sustainable goal without increasing public deficits (Allen and Clouth, 2012). Furthermore, governments found that implementing actions based on circular economy principles can provide opportunities to create new job opportunities and to increase demand for a variety of products (Beaulieu et al., 2015).
- *Natural capitalism:* Hawken (1997) highlighted that the free market economy doesn't assure a sustainable use of natural resources. The capitalism causes a pressure on natural resources. It needs to aim at productivity, but considering an efficient use of resources.
- *Fundamental economy:* Walter Stahel coined this term in 1986 to focus on the function or performance of products. The fundamental country's economy should maximize the usage value minimizing, at the same time, the use of material resources (Stahel, 1997).
- *Life cycle thinking:* focusing the attention on the life cycle of products, it is possible to reduce environmental impacts. According to this principle, it is possible to reduce the use of resources, to reduce the emissions and thus negative impacts on the environment and to improve product's socio-economic performance (Beaulieu et al., 2015).
- *Creating Shared value principle:* this concept pay attention on the integration between business and society so that business choices can benefit both business and society (Porter and Kramer, 2011). This principle deals with a good policies

and actions able to improve the competitiveness of a company and, at the same time, produce social and environmental value for community.

Thanks to circular economy processes, inputs are minimized and, at the same time, outputs are maximized, preserving as long as possible the value of the resources (Preston, 2012). This model is more efficient and productive than traditional linear economy.

The concept of circularization processes can be applied not only to material (figure 4) and natural flows (zero-waste approach), but also to wider issues, as economic patterns of investment/re-investment, or political systems of participative multi-level partnership governance (Angrisano et al., 2017).

In the economic and financial field, circular processes are related to re-localize investments, employment, services and economic support systems and to promote closed loops of re-use, recovery and recycling in material production and consumption chains.

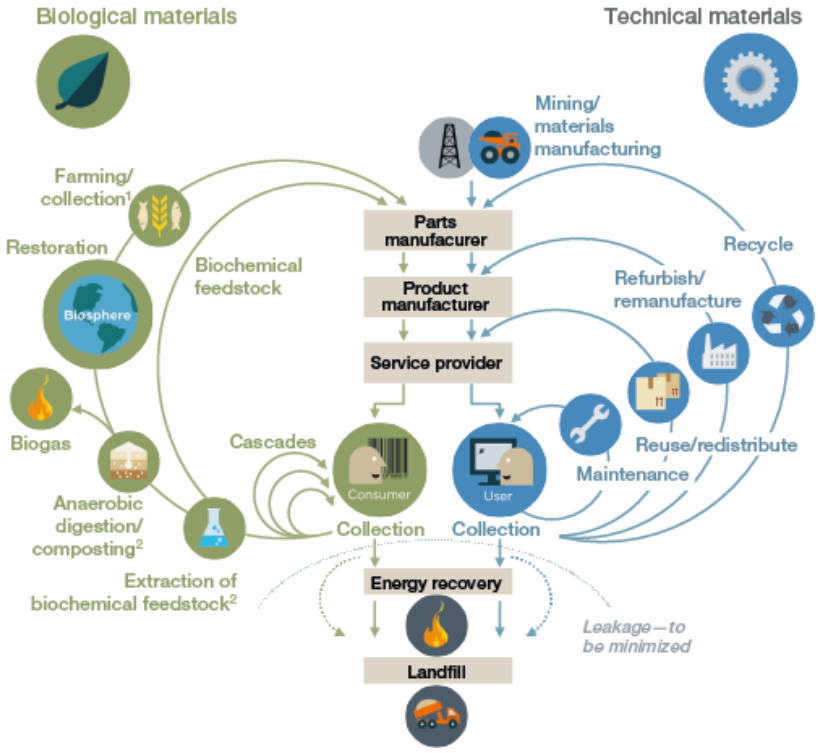
In the social and political field, circularize means to encourage socio-economic systems able to promote equity, social inclusion, mutual responsibility, and to promote more participative political systems.

In this perspective, public authorities play a central role, as they can guide, plan and implement choices and actions moving towards this new model.

Citizens play a fundamental role in this path, too. This is facilitating thanks to the enhancement of accessing to information. Transparency and engagement are fundamental condition to implement circular systems in cities.

Many actors are involved in this complex system; the relationships and interactions among them contribute to make system more efficient and resilient. Therefore, the circular economy is the economy of relationships and it is based on participative and sharing processes, making dialogue among different stakeholders fundamental.

Fig. 12 - Materials flow in circular economy processes



Source: Ellen MacArthur Foundation circular economy team drawing from Braungart& McDonough and Cradle to Cradle (C2C)

4.2 Circular model for city management and regeneration

In a period of great urbanization and natural resource depletion, the challenge is to find new models able to increase urban productivity and, at the same time, make development more sustainable, in environmental, financial, economic, social terms.

The "complex urban landscape" is interpreted as the combination of the following six perceived landscapes and, at the same time, the interaction among them (Fusco Girard, 2014a):

- *Natural landscape* consists of existing natural capital (biomass, biodiversity, parks and urban corridors, agricultural areas, natural resources, lakes, rivers, energy resources, etc.) that characterizes geographically and territorially a city.

- *Infrastructure man-made landscape* is composed of built infrastructures and equipment system (roads, ports, airports, bike paths, housing, public spaces, etc.) able to improve the quality of people life, to promote social welfare and the economic development (improving economies of agglomeration, scale, reducing transportation costs, etc.).
- *Cultural man-made landscape* comes out over the centuries. It is the heritage (cultural memory) of past generations that have to be transferred to future generations (historic centres, etc.) as a fundamental element of identity.
- *Social landscape* is composed of social/civil networks, density of associations, third sector, voluntary sector, etc.
- *Human landscape* reflects the expertise, local knowledge, local entrepreneurship, creativity of individuals. It helps to determine "human scale" of settlement.
- *Financial landscape* consists of local credit institutions, foundations, co-operative banks, third sector organizations, institutions that promote financing of district projects (promoted by inhabitants, etc.), etc.

Considering the complexity of city landscape, it needs to rethink the organizational structure of the city to make it more productive.

In this perspective, the above-mentioned circular model, based on principles characterizing natural systems, can be proposed. Therefore, the challenge is to organize landscapes imitating as much as possible the processes of natural system (circular processes), that is adopting new circular organization processes for conserving and improving their wealth.

Circular economy offers a great opportunity to increase urban productivity and at date there are some good practices of circularization of processes at different scales (industrial symbiosis, etc.). For example in North America (Oakland), Australia (Adelaide, Kwinana), China, Germany (Ruhr Region, Freiburg etc.), Denmark (Kalundborg), France (Dunkerque), England, Netherland, Switzerland some benefits from the implementation of circular processes are achieved: reduction of materials and energy costs, reduction of carbon emissions, etc. In Japan a lot of experiences of urban symbiosis are going to be planned after the positive experiments in 26 cities

(Van Berkel et. Al, 2009; Fujita, 2012; Fujita et. al, 2013; Chen et al., 2012) that show the economic convenience of cooperation.

The industrial ecology represents a field from which to learn in order to move from linear to circular processes, closing the loops to improve urban system productivity. The importance of closing loops is stressed. In this process it needs to consider not only actors individually, but all relationships among them, too.

The circular model can be transferred from a sectorial approach (i.e. waste management) to the comprehensive city organization, its economy, its social system, its governance (Fusco Girard et al., 2014) in order to improve urban productivity. We need to move towards a more virtuous economic model; at the moment, we are only at the beginning of this way.

Circular economy is not only referred to waste cycle (European Commission, 2015), but it is the economy of synergies and symbiosis among different industrial activities, city and industrial system, etc. For example, city and industrial areas can integrate each other transforming urban waste into inputs for local industrial system.

It is the re-generative economy of materials, but also of natural, cultural and social resources, energy, water, etc.

The circular processes are based on synergies among system components; for example, among public institutions, financial institutions, public and private institutions, different enterprises, private enterprises and research institutions, etc.

The density of circular processes, symbiosis, synergies which multiply the flow of benefits influences landscape quality; a high landscape quality enhances the city attractiveness and thus relations and exchanges (Nocca and Fusco Girard, 2017).

The circularization processes and synergies (characterizing natural systems) promote resilience and creativity and then sustainability (Fusco Girard, 2013; 2010).

Relations and bonds have a key role in this model characterizing the complex urban landscape. In fact, they are able to produce synergies, symbioses and circular processes (and thus to enhance resilience of the comprehensive system).

Developing the circular economy in the city means closing the loops, suppressing useless flows and implementing new ones. We can consider the productive city as a city of flows (material and not). This flow-city is characterized by circular processes

that are able to structure the entire city organization. It is able to transform diversity into complementary, identifying and fostering synergic relationships among different elements.

The flow-city, therefore, is not a simple combination of programs and elements, but the result of hybridization processes (Fusco Girard *et al*., 2014) in which different elements are not in a conflicting relation with each other but, sharing intensity, they draw strength and mutual benefits.

The flow-city fosters symbiotic and synergistic relationships, producing multidimensional benefits.

In the flow-city, it is necessary to identify the "cyclifiers". They technically are elements that send resource flows in a circuit; they are connectors between waste streams and demand for resources (www.cyclifier.org).

Inspired by nature and industrial ecology, and borrowing and translating the concept to a wider level, we can identify the "cyclifiers" of a city, that is part of city/elements able to activate and trigger flows (i.e. port, cultural heritage, etc.), generating a "continuous flow" of material (and no-material) resources. The cyclifiers are connectors which, by relating different elements of a system and heterogeneous systems with each other, are able to close the circuits. Thereby, they are able to increase the efficiency of the system.

In this framework, the concept of symbiosis assumes a central role. It should be widen from industrial field to urban and social sphere.

There are different forms of symbiosis. Industrial symbiosis, as defined by Chertow (Chertow, 2000, p. 314), is an activity that "industrial symbiosis engages traditionally separate industries in a collective approach to competitive advantage involving physical exchange of materials, energy, water, and/or by-products. The keys to industrial symbiosis are collaboration and the synergistic possibilities offered by geographic proximity".

Industrial symbiosis is part of the wider industrial ecology sphere (of which it is a direct application) that, by optimizing the materials cycle, has impacts on planning, environmental management and economic development.

An extension of industrial symbiosis is the urban symbiosis, activity that turns municipal solid waste into inputs for industries. It was introduced by van Berkel et al. (2009) to indicate the recycling activities that find their reason for being in geographical proximity and the synergistic relationships between producers of municipal solid waste and industries.

The concept of urban symbiosis is closely linked "to the use of by-products (waste) from the cities (or urban areas) as alternative raw materials or energy sources for industrial operations" (Van Berkel et al., 2009, p. 1545), with the consequent reduction of polluting emissions and recovery of raw materials. Another symbiosis is between city and suburban area (Fujita et al., 2013).

Symbioses are based on circular processes and on density of synergies. They create a high level of interconnection and integration among the different system components. They are collaborative relationships among elements that "help" each other's. Symbiosis means "live together", that is collaboration, exchange: the product of an element becomes a nutrient for another one. It creates bonds. Symbioses existing in nature, i.e. lichens, sea anemones, hermit crab demonstrate advantages resulting from the symbiotic relationships.

In order to move in this direction and make the circular model operational, changes in planning, management, fruition and evaluation are required. In planning field, for example, it means multi-function and flexibility, recovering of abandoned areas through their transformation in focal points for circular economy (co-working, co-housing, etc.). The wealth of the city depends on the new organizational structure that can be improved through cultural and strategic planning, if suitable institutional capital (i.e. rules, norms, laws, standards, etc.) is available.

The consequences of this approach can be read on different levels: design and planning, management/financing filed and evaluation field (new metrics).

Some entry points to implement the circular economy model in city system can be: the historic center valorization/regeneration (in the historic centers the culture of re-use for conservation actions is stronger and it is easier to promote relationships and synergies among citizens); the cities experimenting sharing economy; the cities basing

their economy on touristic sector; the abandoned port areas characterized by an industrial cultural heritage of particular interest.

An obstacle to the implementation of the circular model can be the current institutional capital. It should be reviewed and strengthened to make the model really effective. The behaviour of inhabitants is an obstacle, too. They need to be more aware of their important role in city transformation and to deeply understand how their way of thinking and behaviour can influence the processes. A critical knowledge of all inhabitants and a shared ways of life are necessary.

4.3 From symbiotic processes to hybridization processes

The notion of symbiosis can be compared to the notion of hybridization. Both of them start from the existence of a duality and have as result the production of plus-values and mutual benefits.

Hybridization is the key concept to transfer the symbiosis from industrial sector to city in general (architecture, urban planning, etc.). “The hybridization is becoming a leitmotiv in the growth of globalization and of related aspects of integration /crossbreed/ fusion/juxtaposition of originally different or separate identity” (Fusco Girard, 2014a).

The concept of hybridization has origin in genetics and identifies the crossbreed among different species; from this intersection can arise infertility or vigor-hybrid (Fenton, 1985). Vigor-hybrid means “mixture of creative energies generating new opportunities" (Vitali, 2012).

To better and more broadly understand the concept of hybrid, an example from the automotive sector can be considered. The Hybrid Toyota car is equipped with two engines, electric and petrol engine. Using two different engines (one at the start and low speeds and one during cruising speed) makes the car performance higher compared to a conventional car. Hybrid technology, combining different/heterogeneous processes, increases car performance (low emission values, power, low noise, etc.).

In urban planning the adjective “hybrid” can be referred to landscape; the hybrid landscape is characterized by the coexistence of multiple identities.

In the organizational structure of the city, the square represents an example of hybrid space: there is the town hall, that represents the civil/political power, but also the market, that represents the economic power. In the square there is the hybridization between civil and religious power, between public and private sector, between individual and public interest.

Hybridization produces place capable of attractiveness capacity and catalyst of new functions/activities. It produces new opportunities.

The result is a multi-functionality that is able to increase the efficiency and so the regenerative capacity of resources.

Holl (1985) highlights the difference between hybrid and “mixed-use”, attributing to the first concept the ability to concentrate different functions and define them in terms of urban structure.

For example, a shopping center cannot be considered hybrid, as the functions are juxtaposed without being related each other’s and without “sharing intensity”; this characteristic, instead, distinguishes the hybrid buildings.

The hybrid is therefore a set of different programs which, rejecting any kind of categorization (Fenton, 1985), responds to economic and social dynamics and is “able to react quickly in a context in a state of continuous change according to adapt and versatility strategies” (Vitali, 2012).

van Berkel and Bos defined the hybrid as “an intense fusion of construction, materials, circulation and programme [...] Hybrid structures have no authentic, recognisable scale, their organisation is geared towards allowing function related expansion and shrinkage and this results in overlaps and non-determinate spaces that flow into each other” (van Berkel and Bos, 1998).

In the hybrid the different elements/programs have to create synergies, connections (even physical) and cooperations in a circular process where each element gives and receives. The strength points of this process are the diversity and variety of programs (i.e. public and private).

Circular and hybridization processes influence the organization of space and thus its forms. Hybridization referred to urban phenomena reminds to the definition of city as a living organism characterized by dynamism and complexity. The projects/actions/policies are no longer distinct, but they are linked through a network of resources exchanges (material and no-material).

Hybridization is not a simple connection or fusion of different elements, but the deliberate combination of these heterogeneous elements, overcoming the traditional dichotomies and "creating a *third space* from which new plus-value arises" (Fusco Girard, 2014a).

The hybridization processes are associated to the production of values, producing greater productivity and efficiency, new attractiveness of the city.

Today, the adjective "hybrid" is used also to identify different components in urban planning, architecture, economics, sociology, politics and culture. It highlights the heterogeneity of elements that are intentionally combined. Obviously the result can be negative (as lack of purity, lack of homogeneity) or positive (if it is able to produce plus-values, making the system "living" and regenerative).

For example, in the economic field the hybridization processes refer to the loss of the clear division among different organizational logics, as between profit and no-profit sectors which can generate a new mutualism.

In cultural field the hybridization is related to transdisciplinary knowledge which goes beyond the disciplinary specialists approaches, offering new models and approaches.

Another example is the hybridization between organizational industrial models and organizational models in the services sector. Many other examples could be reported.

Clearly, new evaluation tools (indicators and methods) are required to verify the effectiveness and productivity of these new models (based on circularization and hybridization processes), to move from theory to practice.

Evaluation methods are "now linear". It needs to transform them in order to assess the relations and processes that the circular model is able to activate and trigger. It shifts the attention on a multidimensional perspective. The evaluation tools have to be enriched including social and environmental impacts in a systemic perspective.

In the evaluation field the Planning Balance Sheet and then the Community Impact Evaluation (Lichfield, 2005) are examples of hybridization, combining different approaches. The multicriteria evaluation methods are another example of hybridization in this field.

4.4 Circular model in port cities management and regeneration

As mentioned in the second chapter, port cities and port areas have a particular development potential and can assume an important role to achieve sustainable development, combining in a circular way port economy, logistic, industrial activities with cultural landscape regeneration (starting from local cultural resources).

In these years find new approaches to develop ports and port cities is increasingly necessary (for politicians, economic operators, citizens). The need is to create a sustainable city-port system. In port cities and waterfront regeneration, port areas assume a central role.

Port cities offer a lot of opportunities to make circular economy concrete, through recycling, sharing, re-using, designing, up-cycling (Fusco Girard, 2013).

Port areas contribute to the particular beauty of a landscape which expresses the combination of human and natural creativity and contribute to the identity of the city. Landscape is playing an increasingly central role in economic global competition. In fact, the majority of the most beautiful urban landscapes all over the world are port cities/areas: Bergen, Venice, Genoa, Istanbul, Liverpool, Malta, Naples, Oporto, Saint Petersburg, etc.

The quality of natural and cultural landscape is important for regeneration processes, but it alone is not enough. It has to be integrated with human and social landscape that is able to trigger virtuous circularization processes and synergies, contributing to the human dimension of urbanization (Fusco Girard 2013; 2014a)

Port area can represent the entry point for the entire city regeneration (Fusco Girard, 2013; Nocca and Fusco Girard, 2017). Port and city have different interests and priorities, so it needs to search for solutions able to create synergies between them. It

needs to find solutions able to increase port-city ecosystem productivity (in a multidimensional way).

To this end, more steps forward are required in planning field, decision-making processes, evaluation tools, collaborative approaches (able also to involve wider community).

Port can be a driver for city sustainable development; starting from local cultural resources, it is able to trigger creative processes, to combine, in a synergistic approach, economic, logistic and industrial port activities with cultural heritage/landscape regeneration.

Port area is the place where flows are maximized; for example, it is the place where many flows of the globalized economy arrive at and depart from, the focal point that connects every country in the world.

Commercial, industrial, logistic, tourist and fishing activities are concentrated in port area, making it a driving force for economic wealth.

The achievement of economic wealth often implies high social, ecological and cultural costs. So the net "economic benefits" (that is considering social, ecological and cultural costs, i.e. congestion, pollution, perception of insecurity, etc.) are lower than they seem. Furthermore, these benefits are often related only to some actors, i.e. trade, tourism, industry agents, and they are not distributed to the different stakeholders.

In order to make development of port areas, but of cities in general too, cities should learn from nature wise, organizing their processes as natural ones: moving from linear to circular processes. This new economy greatly contributes to make the entire city more inclusive, sustainable, safe and resilient.

Considering this circular perspective, in the productive flow-city, ports can assume a particular role. They can be a "*cyclifier"* for the entire city, trigger points of flows (Fusco Girard *et al.,* 2014). They are able to increase the efficiency of the system (city and city-port).

Port cities become cities of symbioses: symbiosis between industrial/logistic economy and touristic economy, industrial system and urban system, cultural

heritage/landscape conservation and economic development, etc. (Fusco Girard, 2013).

In this model, technologies assume a central role. They are the nervous infrastructure of the system; they support decision-making processes.

Culture-led strategies have an important role in supporting new regeneration processes in port cities/areas. It needs to integrate (hybridate) in port cities/areas the industrial system based on circular processes with circular processes related to cultural landscape (through the support of the socio-economic system).

4.5 Circular model for Historic Urban Landscape management and regeneration

Cultural heritage/landscape is interpreted as a sub-system of the city (considered a complex dynamic adaptive system). Therefore, it should evolve with society and reflect its changes, adapting itself to new needs of community, in a circular and adaptive way. Cultural heritage represents a hybrid between common and individual, general and particular interest. Cultural landscape represents a hybrid between nature and culture, use-value and market-value.

Recognizing landscape as common good represents a necessary condition to move towards sustainable development, and thus to integrate conservation and development approaches. It is based on empowerment of local community and on the capacity to activate relationships among different stakeholders and transform conflicting interests into win-win opportunities.

Particular features of cultural heritage poses great challenges related to its governance/management, especially considering that it can play a significant role in sustainable development. If on one hand sites of cultural heritage are increasing, there is an increasingly lack in funding support to conserve them. Financial resources are decreasing both because of the increasing scarcity of public resources and because private actors are increasingly focused on the short term.

This lack of funding support represents a risk for the conservation of integrity and authenticity of cultural heritage causing its decaying.

Reducing cultural heritage in a state of decay means costs and, at the same time, losing of cultural memory.

To move towards a symbiosis between conservation and development, conservation needs to be considered, in a wider dynamic and changing perspective, while ensuring the integrity of values (van Oers and Bandarin, 2012)

In this new dynamic and synergistic perspective, cultural heritage conservation/valorization becomes a productive activity (Di Stefano, 1979; Forte, 1977), able of producing plus values in multiple dimensions, such as economic prosperity, environmental quality and social vitality (Fusco Girard et al., 2014).

A creative integration and symbiotic relation between conservation and development is necessary; it needs to "hybridize" different approaches in order to preserve the sign of the past, the identity and, at the same time, to adapt heritage to the needs of contemporary society, that constantly change its demand.

The bridge between cultural heritage conservation and economic development is represented by economics of conservation. The latter is neither a cultural economics nor environmental ones, but it is a trans-disciplinary economics: it is the economics of differences, relations, interdependences. The economics of conservation is a "solver" within the conflict between eternity and transience: between cultural heritage (living for millennia) and men (living in a society characterized by *hic et nunc* culture).

A specific attention can be focused on the incorporation of the conservation activity into the circular economic model of development.

Paragraphs 71-74 of the New Urban Agenda (United Nation, 2016a) introduce the notion of circular economy as a general development model that produce impacts on natural and social context while generating new economic wealth. This introduces a complex notion of value (complex social, economic, environmental value) that stimulates an indefinite enlargement of the lifetime of resources and promotes circuits of cooperation among different actors for producing economic wealth.

The circular model can be proposed for Historic Urban Landscape management and regeneration in order to preserve as long as heritage values in a perspective of symbiosis between conservation and development.

Circular economy is based on cooperation, synergies and symbioses, that is on relational values among human and nature, among human and society. It offers a richer interpretation of economic management than conventional one, because it considers exchange, use and independent from use values, as well as intrinsic values in a holistic perspective.

To achieve sustainable development, all values of cultural heritage/landscape need to be considered. Adopting a circular model means to understand the complex relationships among different values of the resource and the role and needs of different stakeholders.

The circular economy allows conserving the use-value of heritage through the regeneration of resources. In this way, it produces multidimensional benefits: cultural benefits (conserving "alive" a symbol of community identity), economic benefits (in terms of increase of productivity), environmental benefits (i.e. reduction of resource consumption) and social benefits (i.e. employment).

Historic Urban Landscape (HUL) is an approach that allows managing changes and economic development, conserving, at the same time, the sense of "places".

This approach put heritage/landscape in a new perspective that links past and present, present and future, tradition and modernization, cultural values and economic ones, in a systemic/circular and synergistic perspective, which promotes resilience, synergies and stimulates creativity and thus sustainability.

The circularization processes in cultural heritage/landscape (that can represent a ciclyfier in the flow-city system) integrate *import* capability (attractiveness for tourists, talents, capitals, people) and *export* capability (handcrafts products, art, local identity products/knowledge products, innovative services) in a wealth creative process (Fusco Girard, 2013).

In the cultural heritage/landscape perspective, adaptive re-use represents a way to transform principles of circular economy into practice.

Douglas defines adaptive reuse as "any building work and intervention aimed at changing its capacity, function or performance to adjust, reuse or upgrade a building to suit new conditions or requirements" (Douglas, 2006).

Maintenance, reuse, restoration, rehabilitation, but also valorization and regeneration are key words and they are improved through circular processes.

The circular economy allows conserving the use-value of heritage, through the regeneration of resources, and intrinsic one. The adaptive reuse produces multidimensional benefits: cultural benefits (conserving "alive" a symbol of community identity), economic benefits (in terms of increase of productivity), environmental benefits (i.e. reduction of resource consumption) and social benefits (i.e. employment).

Adaptive reuse allows using cultural heritage in the present as in the in future saving its memory and, at the same time, adapting its functions to needs of the community, within a threshold that not compromises their "complex value".

Cultural heritage is subject to constant change, continuous hybridization processes to adapt itself throughout history: each square, each building, each church expresses the "graft" of new points of view, new styles etc. in the historical tradition.

It allows reducing the use of materials, of new land and building, to regenerate existing goods through new functions, to maintenance keeping them "alive".

In built environment there is a great potential for saving energy. The investments pay back well during life cycle of the goods. Energy saving can be achieved through investments in technologies (such as renewable energy systems, energy efficient lighting, cooling, heating) but also through territorial management and behavioural and lifestyle changes.

The functional reuse is not only refers to the fixed capital, but also to knowledge, in terms of values, language, significance, skills. Through functional re-use, we are able to regenerate values, keeping them in time. Heritage reuse can contribute to revitalize local economy with jobs, new businesses, tax revenues and local spending, to provide valuable wildlife habitat and recreational amenities, as well as to regenerate values.

There are many good practices related to the concept of circularization in cultural heritage/landscape field, as Dublin, Liverpool, Hamburg, etc.

This new perspective, that is the adaptive re-use and regeneration of cultural heritage, requires financial (i.e. municipal bonds), regulatory, business and

management (public-private partnership) innovative models. Cities are searching for new business models, finding concrete solutions. They need to be able to integrate traditional businesses (that achieve to economic maximization) with social and environmental productivity. This is linked to the concept of hybridization, putting in a synergistic relationship profit and no-profit, traditional and social enterprise, etc. in a social and environmental perspective.

The empirical evidence shows that circular economic processes are able to produce a reduction of costs (management and operating costs, environmental and socio-cultural costs) and the non-used cultural heritage represents a “cost”. Its creative functional re-use can reduce this “cost”, transforming it in an investment.

5. TOWARDS HYBRID EVALUATION TOOLS

5.1 The necessity of integrated evaluation tools

Investments in HUL conservation can improve overall urban productivity, generating multidimensional benefits and contributing to the achievement of Sustainable Development Goals.

It needs to convince that Historic Urban Landscape conservation/regeneration is an investment (both for private and public) and not a cost. In this perspective, the aim is to identify tools for operationalizing HUL approach.

The question arising from the considerations of the previous chapters is whether the traditional evaluation approaches (such as cost-benefit analysis) have been adequate or inadequate contributing, as a result, to short-sighted and penalizing choices. It needs therefore to review the evaluation approaches considering evaluations derived from actual cases (and not only from hypotheses).

Considering the multidimensional nature of the cultural heritage impacts and thus the possibility to analyze it from a variety of points of view, existing evaluation methods are not sufficient to analyze the identified indicators. It needs to understand how to integrate and "hybridize" different evaluation methods in order to have an approach able to assess the complex indicators related to cultural heritage. Evaluation process is indispensable to operationalize the symbiosis between conservation and development.

In order to demonstrate the convenience of investments in urban cultural heritage and landscape conservation, it is necessary to use evaluation methods integrating, as above-mentioned, the traditional cost-benefit approach, including social and environmental dimensions.

The systemic approach requires multidimensional and integrated evaluation tools. Adequate evaluation tools are required to support the implementation of this model.

A set of evaluation tools (methods, indicators and matrixes) has to be developed for assessing heritage multidimensional "productivity" and allowing replication and scaling-up of successful practices.

Before analysing the methodological proposal, it will outline a brief overview of the evaluation methods.

5.2 Overview of evaluation methods

The methodologies used to give a monetary value to the economic benefits can be divided into four categories: *market-based, revealed preference, stated preference* and benefit-transfer methods.

The choice of the method to be used generally depends on the resources (time, costs) and the availability of data. It is possible identified features and strengths for each category based on existing literature (Throsby, 2001; CHCfE, 2015; Van Balen and Vandesande, 2016; Pearce and Seccombe-Hett, 2000).

Despite the monetary valuations tend to underestimate the real value of cultural heritage for community (as they are not always able to capture the totality of values and benefits), the monetary value of these benefits allows identifying effective strategies for the heritage conservation and valorization; at the same time, it can improve decision-making by increasing the awareness and knowledge of decision-makers and investors (public or private).

The categories of methods for the economic evaluation of cultural heritage are described here below.

Market-based

The *market-based* methods are based on real market data (quantities, prices, costs), relatively easy to obtain. These can be successfully applied to the tourism economy, where market prices are explicit. The value derived from market prices have to be considered as a partial value because it does not represent all heritage values.

Revealed preference

This category is based on people willingness to pay to preserve or valorize cultural heritage. As for the evaluation of market prices, it is based on data from the market, but focusing on individual preferences expressed through statistical data. The main methods are:

- "Travel cost" involves the construction of a specific demand function. By definition, it aims to evaluate benefits of use. The latter is based on the information collected through the administration of specific questionnaires, on the frequency of visits at the site of historical, artistic and environmental interest and on total costs incurred by people to reach, including both the travel costs required to reach the site and other expenses related to its use (for example, overnight, entrance fee).
- "Hedonic pricing" method is based on revealed preferences through the analysis of surrogate markets, that is markets that are affected by the value of the analysed cultural asset to estimate the value of the non-market cultural component. The basic premise of the hedonic pricing method is that the price of a marketed good is related to its characteristics.

Stated preference

The *stated preference* methods deduce the monetary value of the cultural heritage from the preferences expressed by a sample of people in hypothetical markets. The main advantage of these methods is the possibility of being applied to different contexts and to capture the non-use values. The main approaches are:

- "Contingent valuation". It aims to estimate the economic value of non-market goods through a direct survey able to reveal consumer preferences. It is based on the simulation of a hypothetical or contingent market and aims to estimate the willingness to pay for conservation and fruition of cultural heritage or the willingness to accept compensation for the loss of the heritage values. The peculiarity of contingent valuation is that it allows evaluating intangible values.
- "Choice Experiments". It is a multi-attribute assessment method based on surveys on a sample of people who have to express a preference among different

alternative of transformation (associated with a cost to achieve them). Each alternative describes the good to be evaluated through its main features (or attributes) expressed with different levels. The interviewee does not evaluate therefore the good in its entirety, as one entity, but as composed of sub-units.

- "Group valuation". It is a participatory method that deduces the preferences of different social groups through evaluative exercises.

Benefits transfert

The benefits transfer methods are based on the results achieved in studies similar to the subject of assessment, through the evaluation methods above described.

Therefore, the monetary value to be attributed to cultural heritage is deduced from the value attributed to similar assets in other contexts. There are several ways "to transfer this value":

- "*Unit benefit transfer*" – the value is based on the unit value (per hectare, per person, etc.) derived from other studies as reference value;
- "*Adjusted unit transfer*" – the value deduced from similar studies is adapted to the features of the asset to be evaluated
- "*Value function transfer*" – it applies the parameters derived from other studies, determining the value of the asset through a formula.
- "*Meta-analytic function transfer*" – it deduces from other studies a set of parameters aggregating them through a formula.

The evaluation of cultural heritage conservation programs and projects requires the assignment of a monetary value, but this condition, although necessary, is not sufficient to capture all values of cultural heritage and thus define objectives and priorities. Firstly, it needs to identify the beneficiaries of the economic values resulting from investments in order to ensure the fairness (implicit in the notion of sustainable development) and the effectiveness of decisions.

The involvement of the social groups in landscape transformations is a fundamental step of the decision-making process. It has to be supported by evaluation tools able to explain the opportunities and conflicts arising from one or more policy alternatives.

Quantitative and qualitative evaluation methods, which include the monetary value but also the preferences expressed by non-monetary value scales, are needed to effectively assess the impact of conservation/valorization actions.
The complexity of cultural heritage values therefore requires a multi-criteria approach depending on the scale of intervention: strategic-programmatic, planning, project, management and monitoring.

Taking into account the multiple dimensions of cultural heritage and starting from the economic perspective, it is possible to assess by the Cost-Benefit analysis (CBA); it represents a comparison between inputs and outputs in monetary terms, with the aim of assessing costs and benefits of each alternative option (Sen, 2000). It considers that costs and benefits are not exclusively financial, but they can be adequately transformed in monetary terms.
CBA evaluates all gains and losses of all members of society interested in a project. The main limit of this method is its inability of considering all impacts, because it is not be able to capture impacts that cannot be expressed in monetary terms.
So, the cost-benefit analysis could be used to assess the impacts, but not all values are taken into account and therefore it does not represent an evaluation of all the real impacts of conservation.

As the impacts are not always monetary or monetised, other approaches are needed too. Methods able to take into account both monetary (or monetised) values and not-monetary ones, basing on quantitative or qualitative scales, are necessary. Among these there are the Multi-Criteria Decision Analysis (MCDA).
The multicriteria and multi-group methods are key tools for the management and the comparison of positive and negative impacts (Lichfield 1988; Fusco Girard and Nijkamp, 2009); they are able to balance different interests of all stakeholders (public, private, financial, social and civil).
They overcomes the limits of the CBA considering not only the monetary impacts, but also non-monetary (with reference to the ex-ante or the ex-post phase).

MCDA is able to support the decision-making processes, enhancing transparency and analizying the effects of each alternative according to an economic, social and environmental perspective. The choice of the most useful methods depends on the kind of evaluation to be conducted.

In order to evaluate quantitative impacts linked to cultural heritage and considering the possibility of setting some thresholds, we could consider, for example, the ELECTRE (Elimination Et Choix Traduisant la REalité) and PROMETHEE (Preference Ranking Organization Method for Enrichment Evaluations) methods.

The first one, developed by Roy (1968) and available in four different main releases (I, II, III, IV), belongs to the outranking methods based on pairwise comparisons of the options; it is very useful in decision-making processes characterized by more than one criteria (Ishizaka and Nemery, 2013). The second one, available in two main releases (I, II), provides the decision maker with a ranking of alternatives on the base of preference degrees, obtaining a ranking of the actions and a graphical representation of the decision-making problem (Ishzaka and Nemery, 2013; Brans and Vincke, 1985).

Instead, dealing with qualitative data in the evaluation processes (and the possibility of assigning weights), we could consider, for example, the AHP (Analytic Hierarchy Process) and MACBETH (Measuring Attractiveness by a Categorical Based Evaluation Technique) methods.

The first one, developed by Saaty (1977, 1980), structures the decisional problem in a hierarchical form, establishing priorities between the elements of the hierarchy by means of pairwise comparisons and checking their logical consistency. The MACBETH method (that will be employ in the case study analyzed in the last chapter), similarly to AHP, is based on pairwise comparisons; but while AHP uses a ratio scale, MACBETH adopts an interval scale (Ishizaka and Nemery, 2013).

MACBETH (Measuring Attractiveness by a Categorical Based Evaluation Technique) method is an interactive approach that quantifies the attractiveness of options starting from only qualitative judgements in reference to the global goal (the above-mentioned aim).

The MacBeth method consists of two main phases:

- A partial evaluation phase (referred to each fundamental criteria)

- An aggregation phase (referred to the global attractively of functions).

Each function is compared to the others considering simultaneously fundamental criteria (and sub-criteria). In order to structure the evaluation problem, some criteria have to be identified. So, a tree of criteria is generated. For each criterion, selected sub-criteria are identified.

In order to make each criterion (and thus sub-criterion) operational, a “descriptor” of impacts is associated with it.

A descriptor is “an ordered set of (quantitative or qualitative) plausible impact levels” (Bana e Costa et. Al., 2002)

Two reference levels are identified: good and neutral. They respectively represent a “good function” and a “neutral function” (that is neither attractive nor repulsive). They help to better understand the criteria, making the reference levels more explicit. This also allows using a criteria-weighting procedure.

The aggregation is firstly applied for each sub-criterion sharing the same parent criterion. A judgement matrix is elaborated making pairwise comparisons among the different functions with respect to each indicator (sub-criterion).

The comparison in attractiveness is elaborated using the MacBeth semantic categories:

- no difference;
- very weak;
- weak;
- moderate;
- strong;
- very strong;
- extreme.

A numerical scale is generated; it is entirely consistent with all judgements. The functions are classified in a value “thermometer” on a scale from 100 value (good preference) to 0 value (neutral preference). The 100 value corresponds to the good solution, the 0 value to the neutral one. This MacBeth scale represents the impacts that each option/function has on the individual sub-criterion.

It is a partial evaluation phase. Then, these partial values have been aggregated in order to calculate the overall attractiveness of the functions. So, after this first ranking, the program allows having a final ranking of the functions in reference to the overall criterion. To this end, it is necessary to give weights to individual functions. These weights are deduced from a participatory process.

To evaluate weights through MacBeth approach, qualitative judgements have been given. The judgements are expressed by using the MacBeth semantic categories (very weak, weak, moderate, strong, very strong, or extreme difference of attractiveness). Each judgement reflects a view of difference in attractiveness. They are grouped in a matrix. If two criteria have the same weight, they are anyway introduced in the matrix under the category “no”.

After this phase, the impacts of each option/function for each criterion and sub-criterion have been determined. After this partial evaluation phase referred to each fundamental criterion and the weighting phase, the final aggregation phase is elaborated. So, a ranking of preferences for the overall goal has been processed.

Furthermore, it is necessary to consider evaluation methods able to involve community. The generation of value of cultural heritage occurs in the encounter between citizens and heritage (Greffe, 2005; 2009); there is a very strong link between the level of cultural active participation of people and the ability of culture to generate economic and social values.

To this end, we could consider, for example, the CIE (Community Impact Evaluation) and NAIADE (Novel Approach to Imprecise Assessment and Decision Environments) methods. The CIE method (Lichfield, 1996; 2005) is a quanti-qualitative approach that considers costs and benefits of alternative projects/programmes referred to directly and indirectly involved stakeholder groups (Fusco Girard and Nijkamp 1997; Lichfield 2005). It is useful when there is the necessity of carrying out an impact analysis related to the whole community, checking the effects of a program, a plan or a project according to social and economic sustainability. It goes beyond the cost-benefit analysis taking into account not only the economic perspective, but also the

impacts on the different social groups, that is the impacts on wellbeing of the involved community.

NAIADE method (that will be employ in the case study analyzed in the last chapter) is a discrete multicriteria method able to manage quantitative and qualitative data (Munda, 1995, 2006).

This method uses the conflict analysis procedures. It has been used to understand both information about the distance of the positions of different stakeholders (possibilities of convergence of interests or coalition formations) and a ranking of the alternatives according to actors' preferences (social compromise solution).

On the basis of this method, two types of analysis can be conducted (Munda, 1996; NAIADE, 1996): a multi-criteria analysis and equity analysis. In this thesis the second one is conducted.

The equity analysis, based on equity matrix, analyzes possible "alliances" or "conflicts" between different interests in relation to different scenarios. Such information are important to choice the alternatives characterized by a high level of consensus among stakeholders.

To this end, the equity matrix is constructed. Its elements show, in a qualitative way (linguistic expressions), the opinions of stakeholder groups in reference to the alternative scenarios (different functions or issues in the present study).

The processing of these data leads to the calculation of a similarity matrix, in which the similarity level of the opinions of each pair of stakeholder groups (i, j) is presented. These calculations are based on "semantic distance" among the opinions of each stakeholder in relation to the different alternatives.

There are three main steps: the construction of the equity matrix, based on the participative processes (questionnaire); the elaboration of the similarity matrix; the structuring of a "dendrogram", graphically representing "alliances" or "conflicts" among stakeholders.

The dendrogram provides useful information about the consensus reached for each alternative and about divergences in opinion: a great divergence can lead to restructuring the alternatives.

The NAIADE output is related both to the affinity of perception among different stakeholders and to a final ranking of preferences.

5.3 A critical analysis of the ICOMOS Heritage Impact Assessment

For assessing the impacts of conservation and make HUL approach operative, ICOMOS proposed in 2011 the Heritage Impact Assessment (ICOMOS, 2011). This is a fundamental tool to understand the impacts of projects on the integrity and authenticity of cultural heritage. It provides a framework for assessing the impacts of urban transformations "on" cultural value of properties, but it has some limitations; for example, it does not include economic and social dimension of heritage conservation. It is based on expert judgement without considering community perceptions and intangible dimension that are important factors of Historic Urban Landscape.

The HIA method represents a step ahead of the Environmental Impact Assessment; the latter is considered not useful for cultural heritage evaluation because, not considering the individual attributes; it evaluates separately impacts.

This method does not refer to the impacts on the community (social impacts) as it is, for example, the case of the Community Impact Evaluation method (CIE) by Lichfield (Lichfield, 1996; 2005). It has been exclusively developed for the assessment of impacts of projects on cultural heritage.

A careful analysis of the guidance provided by ICOMOS is, therefore, necessary to understand where it is lacking and identify the main points that, if integrated with other methods, can be useful for cultural heritage integrated assessment.

Strengths of HIA:

- The recognition of the multiple values of cultural heritage;
- The assessment of environmental impacts is unrelated to the assessment of impacts on cultural heritage. In fact, the environmental assessments do not necessarily include all parameters necessary for the evaluation of cultural heritage. This recognition brings the focus on specific assessments;

- The recognition of the close relationship between the study area and the immediately adjacent area (buffer zone). It is very important in a local development perspective.

Weaknesses of HIA:

- It is mainly based on the evaluation of visual impacts; The Heritage Impact Assessment mainly evaluates impacts *on* cultural heritage and not *from* cultural heritage on the entire city system;
- Visual evaluation is inconsistent with the complex and multidimensional Historic Urban Landscape approach.
- The main emphasis is on cultural attributes, while the emphasis on the economic value of cultural heritage is very weak. Consequently, the HIA method does not adequately capture these attributes;
- The HIA guide does not provide detailed information about the methodology of the evaluation of impacts and therefore its implementation cannot be effective;
- The HIA guide does not refer to what level of planning this evaluation should be integrated;
- There is a strong emphasis on the Outstanding Universal Value (OUV) (UNESCO, 2011; 2013) of cultural landscape, but there is no particular reference to the cultural landscape which, although not having OUV, has a significant role to local level (for the local identity, etc.).

Opportunities of HIA:

- The field of application allows for greater citizen participation and the including of their interests and needs;
- The importance of the inclusion of cultural heritage management in the traditional planning, policies and programs has been recognized. The ICOMOS guide recognizes cultural landscape management not as an isolated activity, but as an activity to be integrated into development policies;

- The use of new technology to map cultural sites is very important both to keep track of changes and as interactive tool to support decisions.

Threats of HIA:

- Its wide framework makes it a challenge, but also very difficult to apply in operational terms.

As above mentioned, current evaluation methods are sector-based (i.e. visual impacts of cultural heritage, economic evaluation, etc.) and thus they are not able to address the complex challenges of integrated impact assessment (Fusco Girard et al., 2015). They do not allow capturing the multidimensionality of the impacts. They need to be integrated.

It needs a multidimensional approach, able to gather multidimensional benefits of HUL conservation. It needs a hybridization among different evaluation methods, enriching quantitative economic matrix by qualitative indicators, expressed by social components (social matrix), and environmental components (bio-ecological matrix) because the economic approach is absolutely necessary, but not sufficient.

5.3 Towards a hybrid evaluation method: a methodological proposal to operationalize of Historic Urban Landscape approach

As in the previous paraghrapgh mentioned, sectorial guidelines, methods and indicators have been developed for assessing impacts of cultural heritage/landscape conservation/regeneration.

The aim is to demonstrate that the intrinsic, social, economic values of cultural heritage/landscape can be able to increase the comprehensive local productivity and thus city prosperity in a multidimensional perspective, from the point of view of the different stakeholders involved.

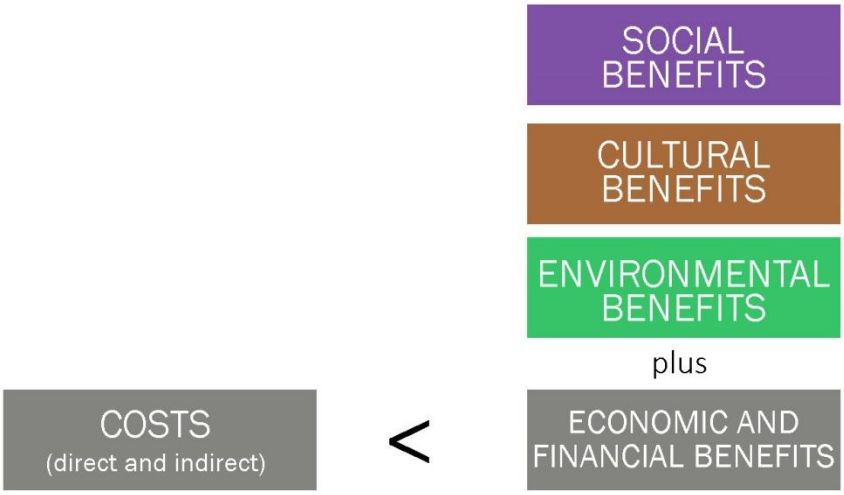
Therefore, HUL approach necessarily requires an adaptation of evaluation tools in order to improve decision-making processes related to landscape transformation and to operationalize symbiosis between conservation and development. It needs to

hybridize different approaches, in order to develop a multidimensional framework able to capture and evaluate all values linked to cultural heritage/landscape. This integrated framework have to be able to include economic, social, environmental and, cultural aspects in a multitimensional perspective.

The visual/perceptual aspect of symbiotic relationship between conservation and development is certainly an important aspect, but equally significant is the functional one: the latter determines the economic value, the added value for both the old and the new.

In order to evaluate the desirability in economic terms of cultural heritage conservation/regeneration, it is necessary the analysis of the costs and the benefits. But the economic analysis alone, albeit necessary, is not sufficient because of the multidimensionality of the issue. In the traditional scheme, the cost-benefit comparison can be summarized as follows:

However, considering the above-mentioned complex vision and the multi-dimensional benefits produced by the integrated conservation, the above inequality can be transformed into the one below. It includes the environmental, social and cultural aspects, too. In this case the inequality can “change direction” and so benefits can overcome costs (as the following inequality shows):



The convenience of the project is determined when the costs are less than the benefits, taking into account not only economic, but also social, environmental, cultural etc. benefits. This calls for new assessment tools to evaluate multidimensional aspects, taking into account qualitative and quantitative, economic and non-economic, tangible and intangible aspects.

Quantitative economic matrix have to be enriched with qualitative indicators, expressed by social components (social matrix) and environmental component (ecological matrix). So, new "hybrid evaluation methods" are required (Nocca and De Rosa, 2014; Angrisano et al., 2017).

As previously noted, investments in cultural heritage produce non-monetized impacts, too; However, these benefits (directly linked to heritage itself or resulting from a general improvement of services as a result of the project) cannot be neglected in the cost-benefit analysis, but it is necessary to quantify them through appropriate indicators able to transform qualitative data into quantitative ones.

Assessing through appropriate indicators, it is possible to produce empirical evidence about the capacity of Historic Urban Landscape to contribute to the achievement of SDGs.

In order to understand through which indicators the impacts of HUL conservation/regeneration are assessed, the set of good practices has been identified in the previous chapter. They have highlighted the multidimensionality of impacts. The deduced indicator matrix, enriched with other proposed indicators, aims to produce empirical evidence about multidimensional impacts of HUL conservation/regeneration (economic impacts, but also social, environmental, cultural impacts) (Fusco Girard et al, 2015).

Indicators deduced from case studies (and grouped into 9 categories of impacts) can be used in a multicriteria assessment framework. Quantitative and qualitative methodologies, based on multidimensional indicators and stakeholders' cost-benefit assessment, are necessary in order to "leave no one behind", that is a fundamental ethical message of the New Urban Agenda (United Nation, 2016a). It is necessary to carefully identify all the stakeholders involved and to be considered in the evaluation process. Stakeholders' analysis allows identifying synergies and conflicts among different values (economic, environmental, social, cultural) and finding creative win-win solutions.

We can identify two main macro-categories of stakeholders involved in heritage conservation/regeneration: producers/operators and consumers/users. It is necessary to analyse costs and benefits for all categories and sub-categories of stakeholders. Here below there is an example of the stakeholder analysis about the comparison of costs and benefits related to both conservation and transformation/development of a small religious building at risk of being demolished for new development (table 17) (Ost - Smart Lab in Naples, February, 2016).

Tab. 17 – Identification of costs and benefits for all stakeholders in development and conservation alternatives.

STAKEHOLDERS	IMPACTS OF DEVELOPMENT		IMPACTS OF CONSERVATION	
	+ (benefits)	- (costs)	+ (benefits)	- (costs)
PRODUCERS/OPERATORS				
Developers/ Financiers	New development profits			
Local contractors/jobs	Net Profits/ income/jobs		Net profits/ income/jobs	
Conservation jobs			Net profits/ income/jobs	
Trustees	Direct profit from project		Net profits from new use(s)	
Local authorities	Revenues/taxes	New infrastructures	Revenues/ Taxes	New infrastructures
CONSUMERS/USERS				
Local owners	Property values	Property tax	Property values	Property tax
Local residents/ occupiers		Rents/ occupation values	Enjoy new place	Rents/ occupation values
New residents	New housing (net of costs)			
Users of religious building			Enjoy new activities	
Local businesses	Net profits/ sales/jobs		Net profit / sales/jobs	
Arts and crafts			Net profit / sales/jobs	
Street vendors			Net profit / sales/jobs	
Visitor/Tourists			Enjoy new place to visit	
Tourism-related businesses			Net profit / sales/jobs	
Temple of fine arts			Net profit from visits	
Local community			Enjoy place /	

			cohesion	
Passers-by		Transportation /traffic	Enjoy new place in town	
Local authorities	Revenues/Taxes	Waste/disposal	Revenues/taxes	
Urban services	Activities / sales / jobs			
Political actors		Net loss of votes	Net gain of votes	
Local Community	New infrastructures	Flash flood/ traffic/taxes	New infrastructures	Taxes
KL Community at large	Housing development		City branding	

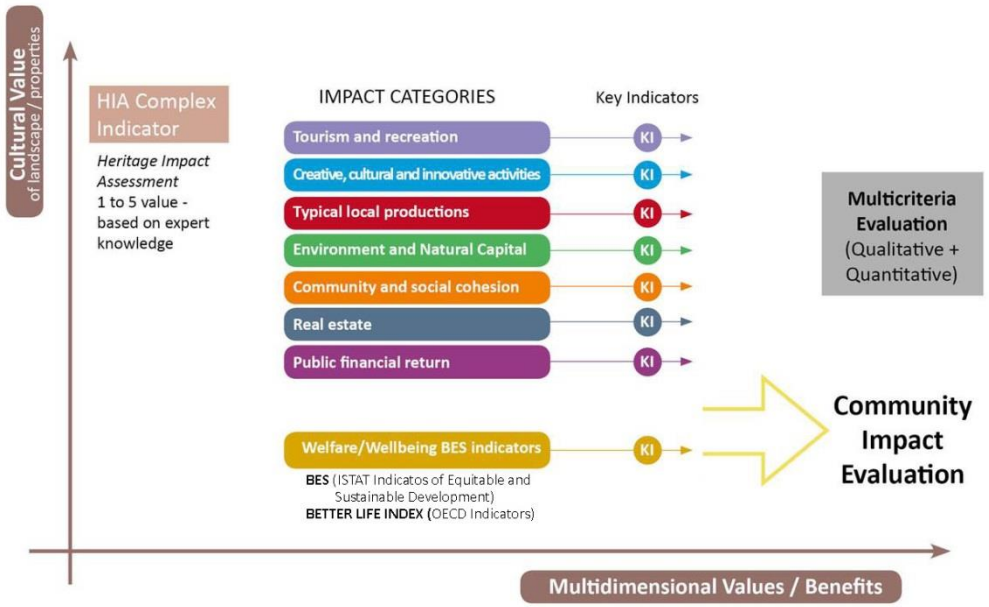
Source: Ost, 2016. Smart Lab in Naples, February 2016

Cost-benefit analysis can be used to evaluate impacts, but it is not able to capture all values of a resource. Therefore, it does not evaluate all the real impacts of investments in HUL conservation/regeneration. Multicriteria, multidimensional and multi-stakeholder evaluation tools have to support decision-making processes.

Multi-criteria and multi-group evaluations are key hybrid tools (Fusco Girard, 2014a) for management and comparison of the positive and negative effects (Lichfield 2005; Coccossis and Nijkamp 1995; Fusco Girard and Nijkamp 2009) referred to all stakeholders (public, private, financial, social and civil), and thus to balance and compensate the different impacts.

A first step towards an integrated approach to evaluate the multidimensional indicators is proposed. The methodological framework is summarized in the scheme here below (figure 13).

Fig. 13 - A methodological proposal for the operationalization of HUL approach



The figure above synthesizes the evaluation methodology for assessing impacts of investments in cultural heritage/landscape conservation/regeneration. It considers the enhancement of the cultural value and the multidimensional benefits produced, taking into account all stakeholders' categories.

The proposed assessment framework aims to be one step ahead of the Heritage Impact Assessment. It aims to integrate the assessment of integrity and authenticity of cultural heritage with the assessment of the multidimensional benefits produced by the project. So, in order to capture all impacts produced, indicators referred to all identified categories (that is tourism and recreation, creative, cultural and innovative activities, typical local productions, environment and natural capital, community and social cohesion, real estate, financial return, welfare/wellbeing, cultural value of properties/landscape) are considered.

Key indicators are identified for each category. They depend on different aspects: scale of intervention, political situations, socio-economic conditions, etc. They have to

be identified on a case by case basis. The choice of the key indicators is based on both expert knowledge and the results of a participatory process of community involvement.

Interviews and questionnaires allow understanding through which indicators the different stakeholders perceive the project's impacts. Through this participatory process, it is possible to identify the most (or least) relevant indicators for the categories of stakeholders and, possibly, to identify other significant indicators. Of course, it needs to consider that the judgment is subjective and it can be influenced by external factors.

A greater number of stakeholders allow increasing the reliability of the results. The interaction between community and expert knowledge is essential at this stage in order to identify shared and understandable indicators to (almost) everyone.

The proposed assessment framework has two significant outputs. They are represented by the Economic Performance and the Multicriteria Evaluation.

Some key indicators can be monetized using different techniques (direct market pricing, avoided costs, contingent valuation, etc.), resulting in the monetary value produced by Cultural Landscape conservation/regeneration projects. This value should be compared to the investment and maintenance costs. This economic performance is only one of the outputs of the methodology.

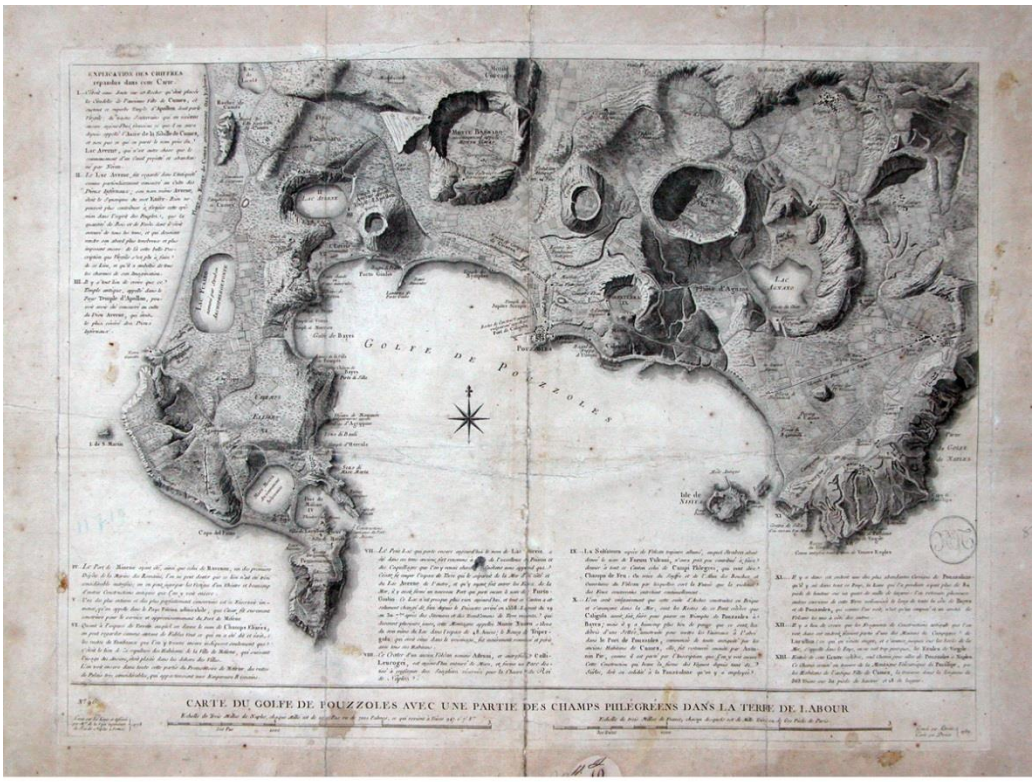
A multicriteria evaluation, based on heterogeneous values of key indicators, can be structured starting from the identified impact categories. This process can integrate the Heritage Impact Assessment (using a 1 to 5 weighted value based on the expert judgement about the project impacts on cultural heritage), providing a comprehensive impact assessment.

The proposed assessment framework, using the category of Cultural Urban Landscape as a complex indicator of urban sustainability, is proposed to assess the impacts of cultural heritage conservation/regeneration, allowing interdisciplinary research and collaboration among stakeholders.

6. CASE STUDY: THE CITY OF POZZUOLI

"Una gita in barca fino a Pozzuoli, delle piccole escursioni in carrozza, allegre scampagnate attraverso la regione più meravigliosa del mondo. Sotto il cielo più puro, il terreno più infido. Rovine d'una opulenza appena credibile, tristi, maledette. Acque bollenti, zolfo, grotte esalanti vapori, montagne di scoria ribelli a ogni vegetazione, lande deserte e malinconiche, ma alla fine una vegetazione lussureggiante, che s'insinua da per tutto dove appena è possibile, che si solleva sopra tutte le cose morte in riva ai laghi e ai ruscelli e arriva fino a conquistare la più superba selva di querce sulle pareti d'un cratere spento. Si vorrebbe meditare, ma non ci sentiamo capaci".
(J.W. Goethe, 1787 in Viaggio in Italia)

Fig. 14 – Francesco la Vega, Carte du golfe de Puozzoles avec une partie del Champs Phlégrérns, 1778-180.



Source: www.sit.regione.campania.it

6.1 Introduction: the city of Pozzuoli

The city of Pozzuoli represents a good opportunity to concretely put into practice what has been analysed in the previous chapters, because it is characterized by a valuable cultural and natural landscape and a complex city-port system.

Pozzuoli is an Italian town of 81,661 inhabitants, located on the gulf of the same name, in a volcanic area, the Campi Flegrei (figure 15).

Pozzuoli has an area of 43.21 sqkm and is the largest municipality in the area. It is located in a hilly area (28 meters above sea level) and it is washed by the sea.

The Gulf of Pozzuoli extends for over 9 km.

Formerly called Puteoli, the city was founded on VI century BC. Became a Roman colony in 194 BC, it has long been an important port for trade until the opening of the port of Ostia, causing the decline of the city. Because of various bradisismiche crises, the city was forced to migration.

Therefore, the city of Pozzuoli is a city full of heritage and history; it is a land marked by geological phenomena that led it to a unique landscape.

In a strategic position close by the Gulf of Naples, facing the islands of Ischia and Procida, the city of Pozzuoli represents a focal hub of the Campi Flegrei, an area located to the north of Naples.

It arises on a caldera where there are geomorphological depressions of volcanic origin. In fact, the denomination Campi Flegrei comes from greek (phlegraios) and means “burning”, clearly referring to the volcanic nature of the territory. It includes a still active volcano, the Solfatara.

Much of the territory is hilly, comprising several volcanic craters including Astroni and the volcano hosting Lake Averno. From this area the soil descends quite steeply to the south (the Gulf of Pozzuoli), while more gradual is the descent towards the west, where insists a flat area at the Domitian coast (figure 16).

This nature has always distinguished the city giving it a strong morphological identity.

Fig. 15 – Identification of city of Pozzuoli

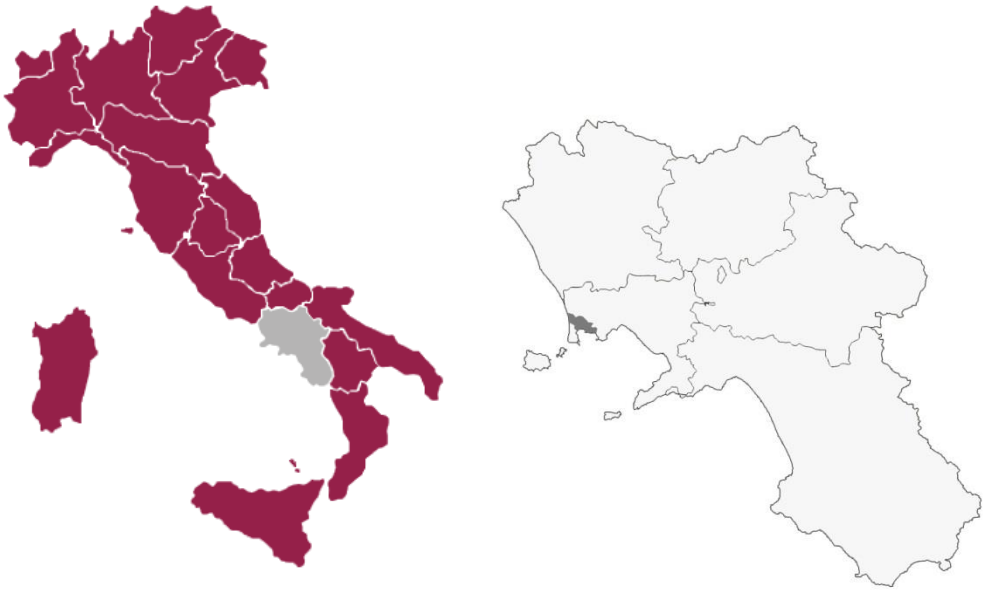
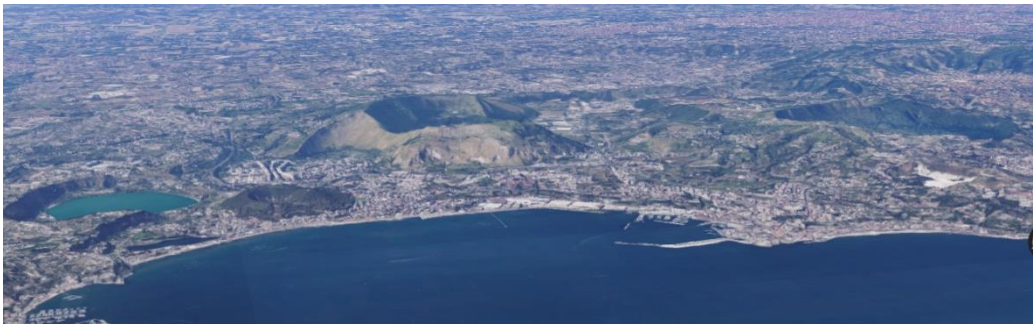


Fig. 16 – A view of the Gulf of Pozzuoli



Source: google maps

The complex physical morphology has affected the configuration of human settlement. It is made of a system of historical centers grew mainly at the coastal area and along the great road tracks as Via Campana and Via Domitiana.

The railway track strongly denies the relationship with the sea. It was realized at the beginning of the last century and runs along the coastline. Once, it served the industrial settlements for supplies of raw materials and transport. The location of industrial settlements (since the late XIX century) contributed strongly to mark the urban morphology.

Arisen by a series of eruptions that created the craters system of the Campi Flegrei (terrestrial and submerged), the area is one of the most potentially dangerous active volcanoes in the world. The volcanic nature of this area causes a high level of seismicity which “shake” the population at regular intervals.

A phenomenon influencing the territorial asset is the bradisismo. It is a geoseismic phenomenon characterizing the area and consisting in a lifting and lowering slow movement of the land, as a result of the underground pressure. The lowering phases, which currently represent the normal condition, are aseismic and characterized by low speed. Lifting phases have instead speeder and are followed by intense seismic activity.

This singular phenomenon caused the depopulation of the Rione Terra (historic center) and the Borgo Vicereale and the construction of new districts (i.e. Monteruscello).

While the existence of these natural phenomena is an “obsession” for citizens, on the other hand this unique environmental system is the cause of the particular natural landscape, characterized by valuable vegetation and panoramic places.

Nevertheless, Pozzuoli has always maintained its identity, whose characterizing factors are not only related to its particular morphology, but also to the historical continuity of functions, such as port, trade, recreational activities.

In the past, Pozzuoli had a predominant role on commercial traffic by sea throughout the Mediterranean. Following the urban and housing developments, as well as industrial, together with an excessive neglect of the place, the importance of Pozzuoli on marine traffic is gradually decreased. Over time, in fact, Pozzuoli has undergone a change, not only physical but also social and economic one.

Pozzuoli is rich not only of precious natural resources, but it is characterized by archaeological resources diffused throughout the area which are an evidence of a

long history of great value. There are many cultural attractions (figure 17) that characterize the area, as the Rione Terra, the Flavian Amphitheater , the Temple of Augustus, the Bath, the Macellum (that is the Temple of Serapis - which accounted for some centuries the most valuable and accurate index metric to measure the phenomenon of bradisismo, an extraordinary instrument for registration of Pozzuoli ground level changes).

Fig. 17 – Cultural resources of the city

6.2 Potentialities and problems of the city of Pozzuoli

A deep analysis of the area has been necessary in order to identify opportunities and problems related to the resources of the city. To this end, SWOT (Strengths – Weaknesses – Opportunities - Threats) analysis has been elaborated.

As above mentioned, the city of Pozzuoli is rich of cultural and natural resources.

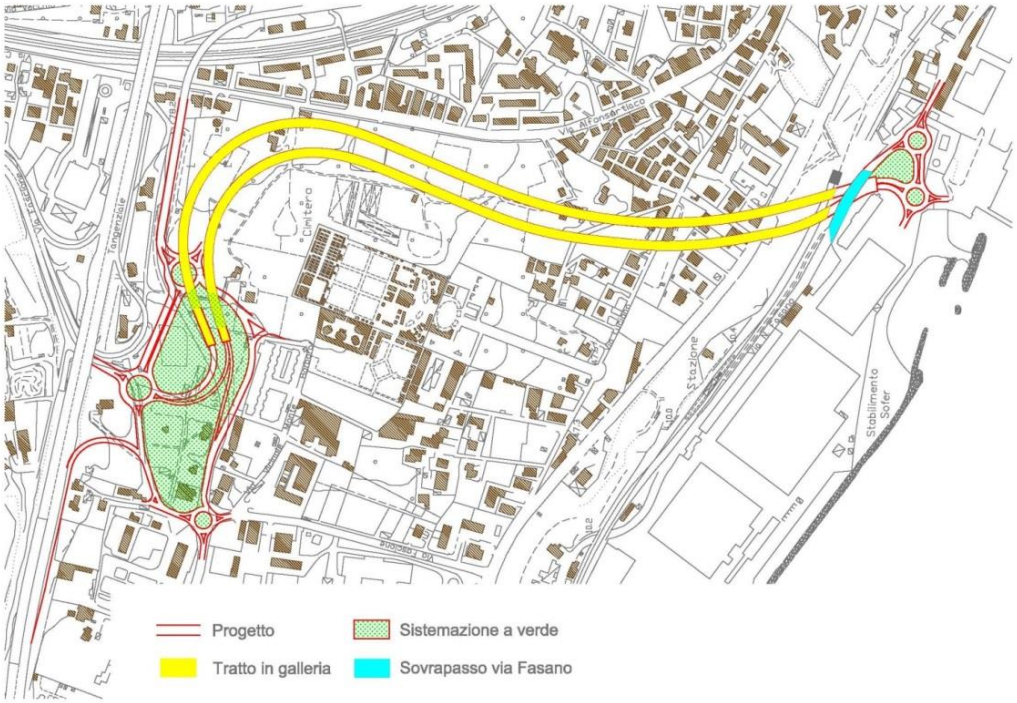
The Rione Terra, the first inhabited settlement of Pozzuoli since the II century BC, was evacuated in 1970 due to a bradiseismic crisis and poor hygienic conditions. Further damaged by the 1980 earthquake in Irpinia and a new upsurge of bradiseism in the

eighties, the neighbourhood has been object of restoration and redevelopment, with the archaeological path below. Starting from 2014, it has been again opened and can be visited. This represents a sign of the increasing interest in cultural tourism developing in recent years.

The implementation of some public works for the enhancement of the infrastructure network (L. 887/84) and European funds for the valorization of cultural heritage (Urban Integrated Programme - PIU Europa) and environmental redevelopment (Grandi Laghi project) contribute considerably to the valorization and development of the territory.

In order to improve traffic flow and reduce congestion in the historic center (from traffic to boarding), a tunnel suitable for vehicles has been designed. In particular, two tunnels are under construction to connect the bypass exit of Via Campana to the port of Pozzuoli (L. 887/84). The tunnel will be 1160 meters long (figure 18).

Fig. 18 – Project of the tunnel between the port of Pozzuoli and bypass exit of Via Campana



Source www.interprogettisrl.net

The development of the port of Pozzuoli, together with the construction of a marine terminal and the related tunnel linking it to the port, is another strategic element to strengthen tourist fruition of the city and to respond to increasing yachting demand.

Great opportunities for valorization and development of Pozzuoli are represented by the inclusion in the Archaeological Park of the Flegrea area and in the Regional Natural Park of Campi Flegrei.

The Archeological Park (which includes for example Flavian Amphitheatre, Necropolis San Vito, Stadium of Antonino Pio, Temple of Serapis) is an independent institution recognized by the Ministry of Cultural Heritage and Activities and Tourism (MiBACT) aimed at the valorization of heritage, especially archaeological one. This represents a great opportunity through which the Campi Flegrei can support the cultural-tourist development. Pozzuoli accesses funds for the elaboration of a systemic project aimed at the recovery and reorganization (in a sustainable way) of the territory in order to create a circuit of visits and enhance the area by improving the welcome system.

The valorization of the cultural landscape, comprising amphitheatres, temples, stadiums, villas, remains of walls, etc. throughout the area offers the opportunity to create a path of continuous and organic visits, integrated with virtual tours and dedicated centers for allowing visitors to experience the Roman town in all-encompassing manner.

The Regional Natural Park of Campi Flegrei was established in 2003 in implementation of the Regional Law of Campania no. 33 issued on 1.9.1993. It extends for about 8,000 hectares, from the Posillipo hill (a district of Naples) to Quarto (a municipality of Naples) up to the Acropolis of Cuma (archaeological site of the city of Naples) and including the entire Gulf of Pozzuoli.

The aim of the Park is to promote the sustainable development of the territory ensuring both socio-economic development and archaeological and natural heritage conservation, protecting the active volcanic area of the Campania Region that constantly evolving. The strategic choices of Regional Park of Campi Flegrei have to be implemented through Plans of Park.

Today the Regional Park has not yet an organizing team and a definitive headquarters. Nevertheless, some initiatives related to promotion and valorization of the area have started to implement thanks to the support of local communities

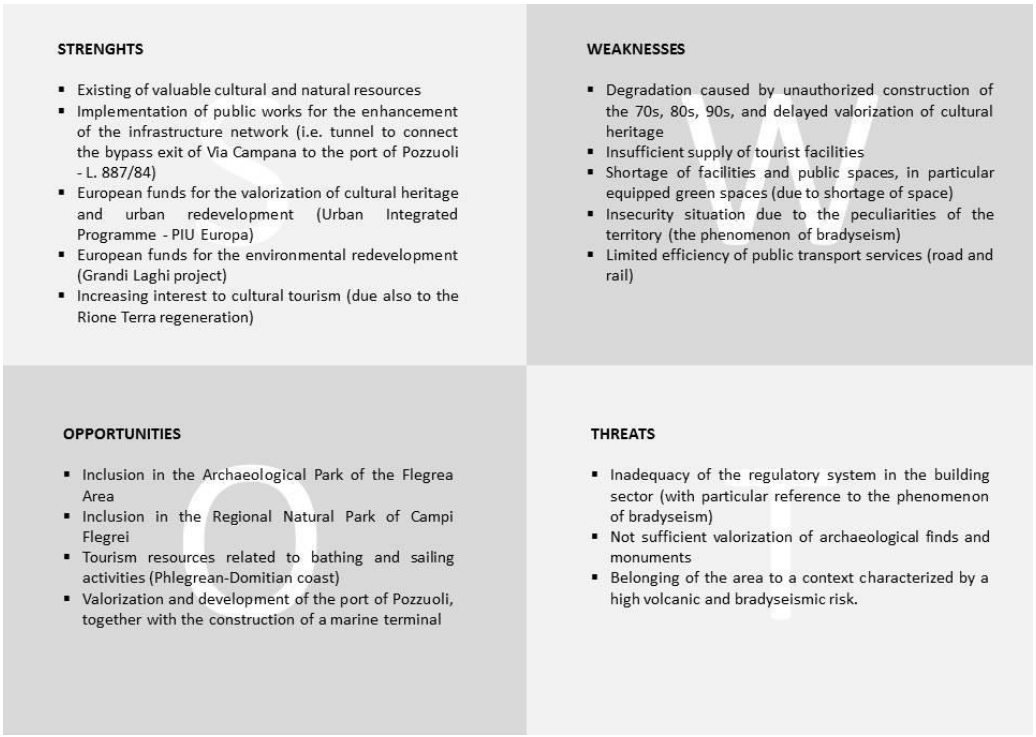
Degradation caused by unauthorized construction of the 70s, 80s, 90s, delayed valorization of cultural heritage, a shortage of facilities and public spaces (in particular equipped green spaces) and insufficient supply of tourist facilities are among the main shortcomings of Pozzuoli territory.

The limited efficiency of public transport services is another weakness issue that required an intervention.

It is clear that cultural and natural resources characterizing the city of Pozzuoli are key elements to be considered in the strategic plan of the development of the area. The lack of valorization which these resources (both natural and cultural) suffer and environmental risks which the area is subject cause an intervention to be necessary.

The analysis of the problems and opportunities of the area are summarized in the SWOT analysis diagram here below (figure 19).

Fig. 19 - SWOT Analysis



6.3 Description of area and aim of the project

The study area is the Municipality of Pozzuoli, with particular reference to the area occupied by the abandoned plants of ex “Sofer” and the still active plant “Prysmian” (figure 20). The area is 17 hectares large.

Fig. 20 - Overview of the study area – orthophotos

Source: Google Maps

The phenomenon of the abandoned industrial sites, resulting from structural changes in the economic and (in particular) industrial system, strongly impacts on the structure of the city. It produces negative impacts on the cultural, social and environmental systems, too.

The issue of abandoned plants is a great obstacle for the territory management, but at the same time, the process of urban regeneration can start just by the recovery of these areas.

Lack of resources (i.e. financial resources) and difficulties in management field make most of the urban areas occupied by abandoned industrial plants still waiting for an intervention.

The ex-Sofer area, which represents the core of the study, cannot ignore the relationship with the cultural heritage network around it and the port situated in the immediate proximity.

The recovery of the historical relationship between city and sea represents a great opportunity to turn the potential of the city into a concrete development opportunity.

A key element in regeneration process is represented by the sea. The sea has always had a deep bond with Pozzuoli: city draws most of its life from the sea and on the sea testimonies of the different cultures that have occurred over time.

Considering the "resource-sea" as a strength point of the city, the local economy can be regenerated starting from a coastline valorization.

Over the years, a barrier separating more and more deeply the city from the sea was arisen; it is a "concrete wall" related to industrial activities that no longer work. In fact, after a first great crisis in 1993, the plants Sofer (figure 21) were closed in 2003, after more than 100 years of activity.

Fig. 21 - The still-functioning systems of Sofer

Source: www.historicaleye.it

The origin of the industrial plant Sofer dates back to the 1800s, when the British Armstrong industry was authorized to establish a metallurgical factory in Pozzuoli for the construction of naval artillery. Then, following a period of post-war crisis (1929), the establishment was transferred to the Ansaldo group.

In 1948 these establishments came under the control of IRI (as a branch of Finmeccanica). So, the construction of railway stock started firstly with the S.M.P. (Mechanical Establishments of Pozzuoli), then with Aerfer (in 1957) and finally in 1967 with Sofer. Over time the plant has reached 170,000 square meters of extension.

Close to the former Sofer, on the western front, the facilities of the Prysmian plant still active are located.

Prysmian S.p.A., until 2005 known as Pirelli Cavi, is the worldwide leader industry specialized in production of cables for energy and telecommunication sector, and optical fibre. This plant produces submarine cables addressed to the production of the largest existing connections in the world.

The Prysmian Group based much of its competitive strength on research and development, innovation of products and of production processes and the use of advanced technologies.

As above mentioned, the area of the former plant Sofer represents the core of the study, but it cannot be considered separated from the urban context in which it is located. This context is characterized by strong presences, such as the port and the cultural heritage network that, developing around it, characterizes the city of Pozzuoli.

Any action related to the former Sofer area, but more generally to the city of Pozzuoli, cannot leave aside the natural phenomena to which the area is subject. It is necessary to combine any development strategies with the natural phenomena that characterize Pozzuoli, particularly the bradisismo.

The area have necessarily to relate to rich past of the city and its testimonies; the aim is to give the city of Pozzuoli a new face, overcoming the currently existing barriers and making available the wide natural, historical and archaeological resources, now largely precluded.

The recapture of the relationship with the sea, but also of the relationship with the ancient submerged city (proof of the long port history of cities), the development of the port, the improvement of the access network to the archaeological and cultural heritage, and also Rione Terra regeneration will contribute to develop and consolidate the strategic role of the city of Pozzuoli.

The development of the ex Sofer area represents a good opportunity to Pozzuoli, a strategic opportunity for improving local economy. It aims to reconnect the coastline with the urban center, giving it back to the citizens.

6.4 Current regulations and existing projects

The owner of the former Sofer area is currently the Waterfront Flegreo S.p.A. It is a company established with the aim of "transformation and valorization of degraded urban centers, abandoned industrial areas and coastal areas". This company focuses its activities on the acquisition, valorization and development of the area currently occupied by the abandoned plant "Sofer".

Considering the its exceptional importance for public interest, for the economy, tourism-cultural, commercial and crafts development, a masterplan including the coastline of Pozzuoli has been drawn up by the municipality.

To this end, the Municipality of Pozzuoli has been signed an agreement in order to appoint the group of designers composed by Eisenman Architects (New York) and an interdisciplinary team (cfr. Annex B).

Following approval of the General Masterplan, the Waterfront Flegreo commissioned the archt. Peter Eisenmann to elaborate the Urban Implementation Plan (PUA) for the renovation and conversion of the former Sofer site.

Before analyzing the content of the masterplan, a brief analysis of the current regulation will be presented in order to put the study into a real context.

In supra-municipal ambit, the first document examined concerns the regulation of the protection of natural and archaeological resources. In particular, two protection systems are in force on the study area: the Regional Park of Campi Flegrei and the provisions of the Territorial Landscape Plan of the Campania Region (cfr. Annex B).

The latter plan was approved by the Regional Law n. 13 of 2008. The provisions of this plan are prevailing against the municipal urban planning tools. The protection rules subdivide the Campi Flegrei in ten areas in which the eligible or prohibited actions are regulated by rules and general provisions. For each zone they are also provided individual actions possible.

Most of the ex Sofer site is included in the zone "A.R.T. - Areas of Technological Research" and partly in the zone "P.I. - Integral Protection". They are respectively regulated by the articles 25 and 11 of the Territorial Landscape Plan of the Campania Region. The eligible or prohibited actions are described in the attached dossier (Annex B).

Considering the hydrogeological structure, the Basin excerpt Plan for the hydrogeological structure (PSAI - Central Campania Region) is in force. It is adopted by the Institutional Committee by resolution No. 1 of 02.23.2015. This plan identifies the areas at hydrogeological risk (determining the perimeter and establishing the relevant requirements) and delimits the hydrogeological hazard areas. As regards the hydraulic risk, there was a risk distribution framework characterized by a level mostly medium and moderate. Instead, the situation regarding the landslide phenomena is more alarming. In facts, the presence of very high and high risk phenomena is surveyed in large part of the territory.

Other important guidelines are provided by the Territorial Coordination Plan of the Metropolitan City of Naples and the General Plan of the city of Pozzuoli (Annex B).

The first plan was adopted, in its updated version, with resolution no. 25 of 01.29.2016 and published on the next 3rd February and declared immediately enforceable.

In the project table P.08.0 the metropolitan territory is divided into program-areas and policy orientations are outlined for each of them. The study area lies in the program-area No. 2. With regard to the transformation of this site, the plan outlines the following guiding principles: naturalistic restoration of the shorelines and integration of the railway line with the landscape; to make the system of landscape relations between the coast and the hinterland explicit; the redevelopment of the urban coastline of Pozzuoli with the creation of a scientific-technologic center (in

continuity with the existing Olivetti) and touristic activities along the zone facing the sea; the enhancement of the nautical center.
Specifically, in table P.06.02 the Sofer-Prysmian area is reported as “recovery and landscape redevelopment area”. It is disciplined by the article No. 61 of the implementing rules (Annex B).
In the table concerning the zoning, the General Plan (approved by that decree No. 69 of 02.23.2002) defines Sofer-Prysmian area as D2 zone, that is “reconversion industrial area”. It is disciplined by the article No. 32 of the implementing rules (Annex B).

The Masterplan of Pozzuoli Coastline (figure 22), from Molo Caligoliano to Punta Epitaffio, was commissioned from Waterfront Flegreo Spa to a design group (composed of Eisenman Architects, Interplan Seconda Srl, AZ Studio) as a result of the Memorandum of Understanding signed with the Municipality of Pozzuoli on 22nd November 2007. The Protocol establishes a covenant between public and private bodies to return the sea to the city.
This new configuration aims at the revitalization of the city and the Flegrea area in general. In particular, it consists of projects with the aim of developing the coastline through the enhancement and valorization of the archaeological heritage, the disposal of industrial areas and the re-development of the waterfront (through the introduction of new facilities and the conversion of the port for a tourist use).
The strategic objective of the new configuration is to pass across the longitudinal barrier-elements currently present, in order to make the natural and historical/archaeological resources available, as today they are largely inaccessible or unrelated. These are the key points of the urban transformation plan.
The general aim is to give the city of Pozzuoli a new face, overcoming the current elements-barrier in order to make the natural and historical-archaeological resources enjoyable, now largely precluded.

Fig. 22 – Materplan of Pozzuoli coastline

Source: www.eisenmanarchitects.com

The development strategy identified by the Masterplan is based on the following principles:

- Economic development of the city cannot be separated from the valorization of the existing archaeological heritage through the improvement and implementation of a network of access to the sites;
- The phasing disused of industrial sites currently existing on the coastline represents a strategic opportunity for the relaunch of tourism;
- The tourism sector can be enhanced transforming tourism from a hiking typology (short-term and short-range) to a typology characterized by a greater permanence and medium and long range. This transformation involves the introduction of new hotels for an approximate capacity of 400-500 rooms (counting those included in the Rione Terra regeneration project);

- The planned development of the port, together with the implementation of the planned marine terminal and the associated project of the tunnel connecting the bypass exit of Via Campana to the port, is another strategic element to enhance tourist enjoyment of the city and to respond to increasing yachting demand.

The strategic transformation starts from the identification of some "attractor" elements:

- *Natural attractors.* The beach nourishment and the creation of a "board-walk" equipped with new access points (above and below the railway line) aim at the expanding and strengthening the Western shores.
- *Cultural attractors.* The implementation of punctual interventions aims to make archaeological sites more accessible. Furthermore, the project plans a Convention center and Auditorium, an Aquarium and Maritime Museum, a Center of marine archaeological activities;
- *Recreational attractors*. The project plans the development of the marina and services to yachting, establishment of the International Academy of Sailing, the conversion of the current fish market into a Visitors center and the regeneration of the Borgo Vicereale. Furthermore, the project plans new accommodations, hotels and spa resorts, new businesses and services for tourists.

The identification of new centralities and activities needs to be supported by new transport infrastructures.

The development and modernization of railway lines (and their stations) is currently underway and many projects are in advanced stage of elaboration.

The relocation of railway line underground (for the stretch that runs through the center of the city) also offers the opportunity for reusing the old line track; a pedestrian and for light transport axis will be constructed on that path.

The pedestrian viability along the coast is guaranteed by a "board walk" delimiting the upper edge of the beaches and crossing the former Sofer area until the new pier of the port. This viability is enriched by two new side archaeological routes that cross the ridge Starza, getting over the difference in height between Via Campi Flegrei and the waterfront (approximately 40 meters) by means of stairs or mechanical means.

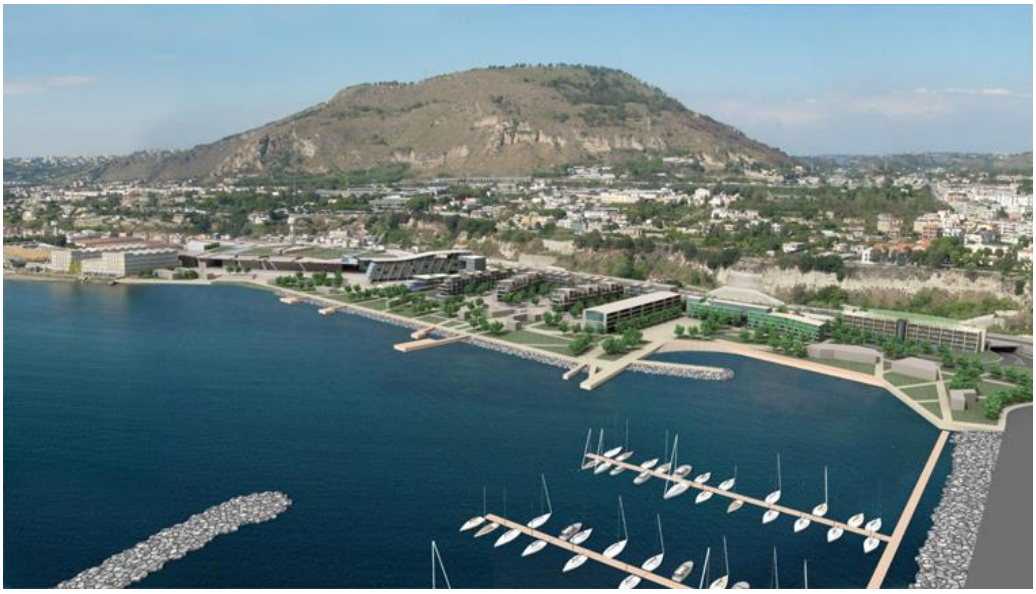
The Masterplan also considers the implementation of cycle paths, connecting to the existing path along Lake Averno.

The accessibility of coastal areas will be enhanced not only through the introduction of above mentioned tunnel but also through a new underground car park (served from sustainable shuttles). The terminal will be planned to accommodate the parking of vehicles to be loaded on ferries. This significantly will reduce the “weight” of the cars on the waterfront traffic system.

The thesis is part of an ongoing process. In fact, “a dialogue” between the municipality and the Waterfront Flegreo Spa (the owner of the area) is currently underway to reach an agreement about the future development of the Sofer site.

In 2009, an Urban Implementation Plan (PUA) was approved by a commissioner resolution (figure 23) (Annex B). The project was entrusted to the Gnosis Architecture studio and approved in 2012.

Fig. 23 - Urban Implementation Plan (PUA)



Source: Gnosis Architectural firm and Municipality of Pozzuoli

It aims at the redevelopment of the former Sofer area creating a multifunctional center for tourism, business, leisure and an equipped pole for the development of arts and professions.

The goal of the PUA is to create a hub of activities able to promote the strengthening and development of sectors such as tourism, trade, leisure, wellbeing and sport (figure 24).

The whole area, marked by the lines identified by industrial warehouses, is divided by functional ones according to the footprint of the former plant building.

The green and public spaces are dominant themes, representing a completing and unifying element. The project, in fact, plans a large equipped park along the coastline; three urban squares and small restaurants are placed within it.

The first square (to the east) is the “Piazza della Vela”. It is characterized by the recovery of an existing building and the buildings that will house the Worship Center, the International Academy of Sailing and the Yacht Club.

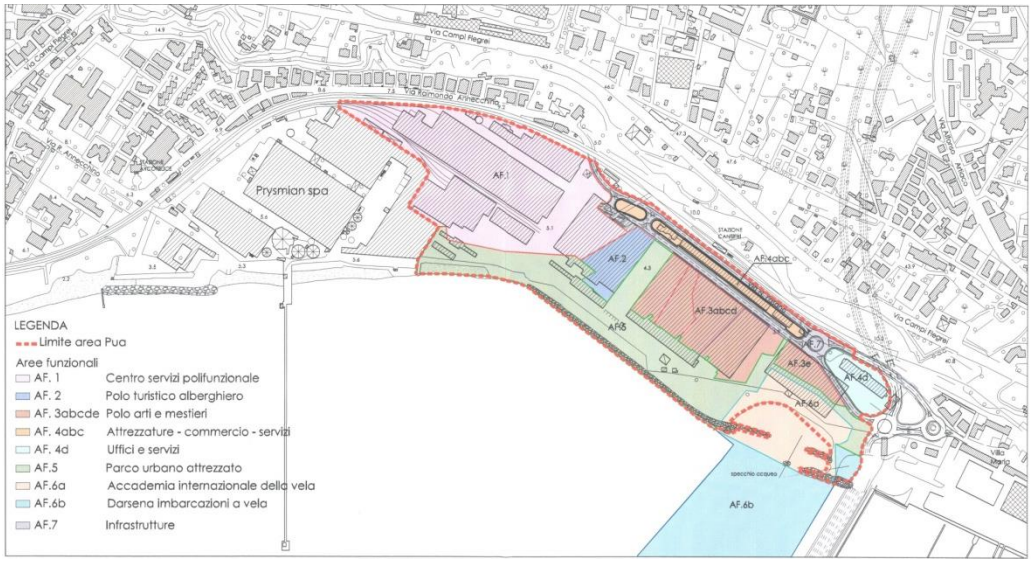
The second square, Piazza Belvedere, is at the end of the walk on the west side. Here a Multifunctional Services Center will build. This intersects with almost orthogonal “Piazza della Stazione”, the arrival point of the railway; in this square a Service Center

and other buildings for accommodation, the Hotel and Spa and the Arts and Crafts Pole will take place.

The role of connecting harmoniously different uses is entrusted to the large green park running parallel to the sea and taking the role of horizontal totemic element. The area is entirely pedestrian and bicycle.

The existing street, Via Fasano, will double with a large road (internal to the lot) In order to facilitate the traffic flow. This road is connected with Naples bypass (via the tunnel) and Arco Felice (through a new railway line underpass). The project involves the creation of large car parks, mostly covered.

Fig. 24 – PUA, division into functional areas



Source: Gnosis Architectural firm and Municipality of Pozzuoli

The Flegreo Waterfront Spa presented on November 2015 a "Proposal for a revision of the approved PUA" (figure 25), referring to the "gravity of the economic situation that has reset every entrepreneurial expectation at startup...". In particular, the society believes that the intended uses by the PRG and the PTP (applied basic

research, business services, advanced and high technological level industrial production, scientific-technological, cultural, tourist and manufacturing activities, infrastructure, accommodation and leisure) are included among those which have suffered, in recent years, the greatest decrease both in terms of investments and use. The owner declared as justification that "...there are no longer the entrepreneurial conditions to implement the redevelopment of the area through those functions and with related heavy public financial burden".

Fig. 25 – Proposal for a revision of the approved PUA

The proposal provides for the partial change of the intended uses of the approved PUA (figure 26), converting a part of the activities relating to the technology and craft production and office activities into residential assets (including Social Housing units, in reference to the Regional Law 19/2009 – Piano Casa).

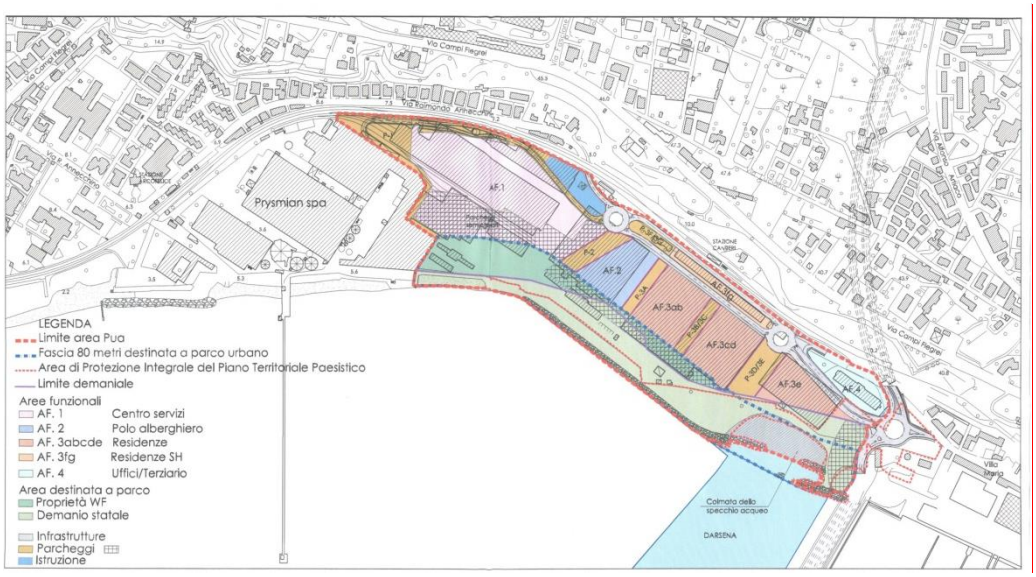
The proposal provides, therefore, the construction of about 70 Social Housing as well as the extension of the park and different articulation of roads and parking (in order to allow a better use of the area). The share of residences planned, net of Social Housing, does not exceed 19% of the total volume of the PUA.

In brief, the proposal for a revision of the PUA includes:

- Reorganization of the road system (primary infrastructure works);
- Changing the intended use of the area occupied by the Arts and Crafts Pole from tertiary activities, service, commercial, production and high technology activities to residences and commercial activities on the ground floor;
- Changing of the intended use of the volume occupied by offices, services and public facilities to Social Housing;
- Reorganization of the secondary infrastructure works, resulting from both new residential function and the different distribution of the planned facilities.

More details on the proposed revision of PUA are described in the attached dossier (Annex B).

Fig. 26 – Proposal for a revision of the approved PUA, division into functional areas



The City Council, following the submission of the review proposal of the PUA, stated (through the resolution No. 86 of 21 July 2016) the admissibility of such a proposal and the willingness to consider more different revision hypotheses, always in accordance with the requirements of current legislation.

More details on the above mentioned resolution and on the admissibility of the proposal are described in the dossier (Annex B).

6.5 Pozzuoli analysis and statistical indicators

A grid of indicators, extrapolated from different source (ISTAT, Campania Region, etc.), has been elaborated and analysed in order to widen the knowledge framework of the city of Pozzuoli. The aim is to understand and analyse in depth criticalities and potentialities of the city and, therefore, support the strategic choices of development/regeneration. It is important to underline that data, especially those deduced by ISTAT database, are not updated to the most recent years; so, many of them cannot be considered a full analysis of the current situation of the city, but they can be useful to understand the trend of some issues. In addition, the different sources refer to different reference years, making data difficult to be compared and aggregated.

These indicators are classified on the basis of the 9 categories identified in the third chapter (Annex C).

The Campi Flegrei are characterized by a unique environmental system, in which the particular geomorphology of volcanic craters has characterized the nature of the soil and the shape of the landscape. However, natural landscape has not been sufficiently protected and valorized over the years. The excessive human intervention (inhabited settlements, road and port infrastructures, etc.) compromised this particular environment.

In order to safeguard and valorize natural and cultural heritage of Pozzuoli, the city, as mentioned above, has been included in the Regional Park of Campi Flegrei.

As above mentioned, the city of Pozzuoli and the entire area flegrea are resource-rich territories. It implies a natural vocation for tourism development. After a long period

of abandonment, in recent years the attention is focusing more increasingly on the territory safeguard and the activities related to tourism sector.

Although this attention, the number of visitors to the major archeological sites has been decreased. The Anfiteatro Flavio e Tempio di Serapide (entrance by ticket) has registered 27141 visitors in 2015 compared with 29631 visitors in 2014.

The Archaeological Park of Cuma has registered 31805 visitors in 2015 compared with 36705 in 2014.

These data show an inadequate promotion and management of resources of the territory that are not able to produce multidimensional benefits for community.

Considering the soil characterized by urban use, it is evident that Pozzuoli has been affected by a strong phenomenon of urbanization and building growth in recent decades. The territory of Pozzuoli has changed because of the gradual building expansion. This data is confirmed by the index of utilized agricultural area analysed here below.

The utilized agricultural surface (SAU) has registered a considerable decrease: from 1082.05 ha in 2000 to 440.55 in 2010 (variation: 58.91%). The total agricultural surface has decrease from 1404.31 ha in 2000 to 550.41 in 2011 (variation: 60.81%).

Consequently, a very significant decrease in companies operating in the agricultural sector has been reported comparing the census of 2001 and 2010 (Agricultural Census). During the year 2001 there were 1479 agricultural companies. This number as decrease of 80.87% in 2010 (283 agricultural companies).

Concerning to the area utilization, for example, data underline a significant decrease related to the vineyards, although the Campi Flegrei are a very popular area for indigenous vineyards. In fact, already at the time of the Greeks and later the Romans, this activity characterized the territory. Today, despite of the intense urbanization, it is already a central activity and there are excellent ("piedirosso" o "per e' palummo") red and white ("falanghina") wines. In fact, Plinio (Roman author) already described them in some of his writings. To date, the number of wine-producing companies has registered a decrease equal to 80.87%, from 1479 companies in 2000 to 283 in 2010. The SAU and the SAT of wine-producer companies have reported a significant contraction. The SAU is reduced from 1072.5 ha in 2000 to 440.55 in 2010 (variation:

58.91%) and the SAT is reduced from 1404.31 ha in 2000 to 550.41 in 2010 (variation: 60.81%).

As regards the General Census of industry and services in 2011, data reveal that in Pozzuoli 3973 companies (3673 in 2001) are present for a total of employees equal to 13249 (15127 in 2001).

Data referred to the economic activity sectors show a significant majority of companies operating in the trade and services, while less is the importance of agriculture and fishing.

Small businesses are prevalent in the territory, usually family-run (1-2-3 employees). There are 2308 workers in businesses with 1 employee, 539 workers in businesses with 2 employees and 524 workers in businesses with 3 employees. There are also some larger companies, capable of employing between 50 and 250 employees (for example, there are 14 business with a number of workers between 50 and 99).

Pozzuoli belongs to Labor Local System of Naples. Therefore Naples, together with Pozzuoli and the area flegrea, represents a homogeneous territorial entity. It means that the commuting between Pozzuoli and Naples is so high that their employment dynamics are interconnected.

Focusing attention only on the city of Pozzuoli, the area is characterized by insufficient promotion of local tangible and intangible resources and, therefore, a high unemployment rate.

Statistic data, listed also in the annex C, show:

From the tables below shows:

- the high unemployment rate (30.7%) with higher rates among women (37.1%);
- the worrying fact of youth unemployment (71.2%).

Data highlight also a significant increase of the workforce employed in industry (3901 employees in 2011 compared to 3238 in 2001). Furthermore, a light increase of workers in trade has been registered (4198 employees in 2011 compared to 3869 in 2001). Very significant is the constant increase in number of the local workforce employed in other activities and the service sector (8469 employees in 2011 compared to 6873 in 2001).

The employment incidence in industrial sector has decreased from 22.3% (2001) to 17.9 (2011), while the employment incidence in the extra-trade tertiary sector and the employment incidence in trade sector have increase respectively from 56% (2001) to 59.4 (2011) and from 18.5% (2001) to 19.3 (2011). A decrease has been registered also in the employment Incidence in skilled manual trades, or agricultural workers that decrease from 17.9% (2001) – and 30.6% (1991) – to 13.9% (2011).

Furthermore, there are 154 associations in various sectors (74 associations in 2001), but this data doesn't include the associations not registered at the Municipal or Regional Register.

Data related to the total waste production destined for recycling shows a rate of 38.4% in 2012. Data about the production of pro-capita waste (587.26 kg/inhabitants/year) instead reflect the provincial and regional average.

The main road network consists of Naples bypass which runs through most of Pozzuoli. There are different railway lines, that are Cumana, Circumflegrea and Metro (Line 2). The first two differ in the route: the Cumana runs along the coastline while the Cirumflegrea along the inner area.

Critical data about these services arises: the low frequency of service and the absence of a direct link between the city center and the suburbs.

The Metro Line 2 reports delays and inefficiencies due to the use of the same line by long-distance railway trains. Despite the above problems, Line 2 has a strategic role because it runs through the whole city of Naples, from the western side to the east one.

The railway lines are integrated with road transport. The latter, however, does not meet the needs of short-range journey. Furthermore the Archeobus, a public transport line dedicated exclusively to the Campi Flegrei for cultural tourism purposes, connect the main archaeological sites in the area only during the weekend and with only one departure every hour.

Several shipping companies provide maritime links between the City of Pozzuoli and the islands of Ischia and Procida.

The "Metro del Mare" guarantees since 2002 an alternative to road transport, but it works only during certain months of the year.

Pozzuoli in recent years has seen considerable increase in congestion urban roads, especially during weekends and in the evenings.

A restricted traffic zone (ZTL) has been established in the center historic, but it is characterized by a “uncontrolled parking”. Toll parking could be a significant income for the municipality.

Data shows the large amount of cars present in the Municipality of Pozzuoli. In fact, the amount of cars has been 50371 in 2015 (49810 in 2014), 617 cars every 1000 inhabitants (609 in 2014). The amount of bus has been 172 in 2015. They were 160 in 2014, so an increase has been registered.

6.6 Methodology and evaluation process

Pozzuoli still has a low attractiveness, despite having a strongly attractive and valuable cultural “treasure” (also for the co-existence of this asset in a particular and considerable landscape) and having a good potential linked to the “resource sea” and to its strategic location.

A strategic proposal for the socio-economic development of Pozzuoli is necessarily linked to the enhancement and valorization of archaeological and environmental heritage and the city-port system. It requires a strong community involvement and a relation system among different stakeholders and actors, both public and private.

The proposed methodological approach, starting from the multidimensional indicators matrix, is applied in the present case study in order to include multiple dimensions in the evaluation process supporting the identification of sustainable development strategies. This evaluation approach takes into account the above highlighted multidimensionality, also including both expert and community knowledge.

In order to define possible development strategies, after a first phase related to the analysis of the context, the existing regulatory instruments and proposals for new functions/area regeneration (phase of knowledge), a stakeholders’ involvement process has been launched. Stakeholders have been identified among institutions, technical-professional organizations and community.

The participatory process carried out the production of several useful information for supporting strategic choices for the future of the ex-Sofer area.
Based on inputs intentionally prepared, this process has allowed producing collective opinions, analyzing possible conflicting behaviours, acquiring local information, synthesizing information and creating more preferable and shared options.
Three main phases can be identified:

FIRST PHASE: *organization/formulation*
During this phase the process has been organized. Three groups of stakeholders have been identified: institutions, technical-professional organizations and community. Starting from the knowledge phase and thus the analysis of the city of Pozzuoli, issues and topics on which to focus the attention of the participatory process have been identified. Supporting material to meetings and questionnaire have been elaborated in this phase (they will be described in more detail below).

SECOND PHASE: *implementation*
The second phase has consisted of the actual implementation of the participatory process. The questionnaire has been administered to the community and meetings with representatives of institutions and technical-professional organizations have been carried out.
During this phase, different ideas and opinions have been acquired representing the reactions to the issues raised of the interviewees involved.

THIRD PHASE: *processing*
The third step of the process has consisted of processing the data collected during the second phase and the extrapolation of the results.

As indicated in the first phase, surveys to delegates of institutions and technical-professional organizations have been organized.
Meetings with delegates of the following institutions have been held:
- Campania Region

- Metropolitan city
- Municipality
- Superintendence
- Basin Authority
- Port Authority
- Port Captaincy

Meetings with delegates of the following technical-professional organizations have been held:

- Professional Association of Geologists
- Professional Association of Architects
- Professional Association of Engineers
- ACEN (Association of Builders Construction of Naples)
- Industrial Union
- Trade Union

A dossier (Annex B) has been drawn up for these meetings. It describes the area of project and its context, with reference to spatial features and current legislation. In addition, it describes the aims of the study and highlights the open-issues related to the strategic proposal for the socio-economic development of Pozzuoli.

This dossier has been the starting point for the debate with the institutions and technical-professional organizations and a guide to structure meetings along common lines. It has been aimed to introduce the issues under consideration and to stimulate discussion and interaction.

Open issues guiding the meetings have been the following:

- Adequacy of the area's boundary
- Identification of problems and potentialities of the area
- Development and valorization objectives and strategies
- Actions and proposals (new functions to be set up)

Useful observations and considerations have emerged during each meeting. They allow understanding the points of view of the different stakeholders in relation to the Urban Implementation Plan (PUA) and its proposed revision (analyzing weaknesses and strengths) and, more in generally, to understand more deeply potentialities and

problems of the study area and Pozzuoli in general. The aim of these meeting has been also to know the demand of functions and highlight some strategic guidelines for the development and requalification of the area.

The issues emerged from the meetings have been represented an element for the construction of the strategic lines of development.

The need to broaden the perimeter of the study area to the entire city of Pozzuoli was the first emerged issue in order to analyze the impacts produced by the localization of new functions in the ex Sofer site on the entire city.

A project linked to the network of cultural and natural heritage characterizing the city of Pozzuoli is certainly a common theme among all meetings.

The more shared idea for the development of the area is to work towards the enhancement of the touristic functions/activities because the city, as mentioned before, has a great potential offered by the rich untapped both naturalistic and cultural heritage. The tourism needs to change from a short-term and short-range tourism to a medium and long one.

Creating an attractive center and increasing the supply of accommodation have been a point coming up in almost all meetings.

Several proposals regarding tourism functions have been emerged during the meetings, such as an info point and a tourists welcome center, a leaving point for tourist buses, guided tours and excursions, an educational-geological tourism center and a museum center (addressed to the knowledge of places, etc.).

The MiBACT has recognized the autonomy of the Archaeological Park of Campi Flegrei and this represents a great opportunity for Pozzuoli. Therefore, it can be useful to have an on-site command for the Park.

The need for functions strictly linked to the port is another interesting emerged aspect. Through the port of Pozzuoli about three million passengers per year pass today. This has focused the attention on the need for a maritime station, as a possible function that can be placed in the ex-Sofer area.

The need for a large parking area has been another shared issue arise during the meetings, especially considering that the pedestrianization of the entire area near the port and a long walk from Via Napoli Via Campania are ongoing projects.

The need to pay more attention to the waterfront than expected by the PUA has been highlighted too. Greater attention should be paid also to mitigate impacts through green roofs which can be used as panoramic viewpoints and intended to functions such as restaurants, bar etc.
The idea that the residences are not a good entry point for the revitalization of the area, and the city in general, has been shared by all interviewee.

Parallel to the meetings with the institutions and technical-professional organizations, a questionnaire (Annex D) has been prepared and administered to flegrea community (presidents of associations and residents). Its purpose has been to understand their satisfaction level about some issues and the most preferable functional alternatives for the refunctionalization of the ex-Sofer area. Forty-one questionnaires have been filled by representatives of associations and citizens.
The analysis of results of the survey has been allowed identifying some strategic lines of development and identifying new possible functions to be set up in the ex-Sofer area.
The results of the questionnaires administered to the community have allowed knowing the citizens' point of view and outlining strategies as much as possible shared. The consultation of stakeholders allows making choices that are not top-down and thus having more social consensus. Participation plays a key role in decision-making processes.
The social and/or political choices are characterized by uncertainty, conflicting values, stakes and urgent decisions (Funtowicz and Ravetz, 1990). To solve this problem it is necessary dealing with it from different points of view, involving as much as possible the stakeholders, transforming the evaluation process in a dynamic, flexible and adaptive "learning process" (Funtowicz et al., 2002), able to evolve according to possible changes (Cerreta and Malangone, 2014). Evaluation and participation are able to encourage the arising of a society rejecting external control.
The questionnaire has been divided into four sections whose results have been individually analyzed here below.

The first section of the questionnaire is related to understanding the level of community satisfaction about some issues.

The interviewees had to express their level of satisfaction (then evaluate by NAIADE software), according to a scale (low / medium-low / medium / medium-high / high) related to the following issues:

- state of conservation of cultural heritage;
- usability of cultural heritage;
- urban landscape quality;
- transport efficiency;
- equipment and public spaces supply;
- usability of equipment and public spaces;
- economic activities and services supply;
- level of seismic and bradiseismic risk perception (safety):
- level of security perception related to the use of public spaces;
- sea-city relationship - visual relationship;
- sea-city relationship – physical connection

This first section of the questionnaire has highlighted a shared dissatisfaction related to urban transport efficiency. In fact, more than half of the interviewees, in particular 70.7% of them, consider himself extremely unsatisfied with this. Only 7.3% consider himself more and less unsatisfied and no one is satisfied.

The result about cultural heritage is quite clear. 46.3% of interviewees assert that it is characterized by a very low level of accessibility.

41.5% of surveyed population think that cultural heritage is preserved in medium conditions, 31.7% in medium-low conditions and only 7.3% in medium-high conditions; no one asserts it is in a good state of conservation.

41.5% of interviewees consider himself more and less satisfied with the quality of the urban landscape (medium level).

A more positive outcome concerns the supply and usability of equipment and public spaces. 48.8% of interviewees have a medium-high satisfaction level related to their supply; only 12.2% are not satisfied. 41.5% are satisfied with the level of usability of such equipment (medium-high level) and only 4.9% are scarcely satisfied.

The economic activities supply has had a positive judgement, too: 43.9% of the interviewees have a level of medium-high satisfaction, 31.7% a medium level.

39% of interviewees have the perception of seismic and bradiseismic risk characterizing the city of Pozzuoli.

The perception of safety related to the use of public spaces has had many different answers: 15.4% feel safe (high level), 34.1% perceive a medium-high security level, 31.7% medium level, 4.9% medium-low, 16.6 low.

The visual relationship between sea and city, instead, fully satisfies 9.8% of the interviewees. 38.6% have a medium-high satisfaction, 31.7% medium, 14.6% medium-low, 7.3% low.

Finally, 43.9% of the surveyed population are more and less satisfied (medium level) about the physical relationship between sea and city (in terms of access) against 9.8% which are not at all satisfied (low level).

The second section of the survey has been focused on the understanding of the priorities of intervention of these issues. The interviewees had to assign a value from 1 to 10 to the identified issues, thus placing them from the most important issue (1) to the least one (10).

The transport efficiency, cultural heritage conservation and accessibility are considered priority issues for the revitalization of the city of Pozzuoli. The actions related to supply and usability of equipment and public spaces and the economic activities supply are less priority (interviewees are more and less satisfied).

The third section of the questionnaire is specifically focused on the ex-Sofer area. The aim has been to understand the preferences of the community about the possible functions to be set up. Each interviewee has expressed his satisfaction level (low, medium-low, medium, medium-high, high) on the proposed functions (in relation to the PUA and the revision plan of the PUA). In this section of the survey, the interviewees have had the possibility to propose other functions (not specified in the questionnaire).

The function having the greater consensus is undoubtedly the public park, which is considered adequate by 75.6% of the interviewees, compared with 2.4% who do not consider it appropriate.

The park areas and tourist accommodations are two functions considered adequate for the refunctionalization of the ex-Sofer area, highlighting the awareness of citizens about the lack of this function supply. So, these issues need to be considered for the regeneration of the area.

46.3% of surveyed population consider park areas highly necessary, 24.4% medium-high, 12.2% medium, 9.8% medium-low, 7.3% low.

Regarding the tourist facilities, however, data emerged from the questionnaire are the following: 31.7% consider this function highly adequate, 36.6% medium-high, 14.6% medium, 9.8% low, 7.3% medium-low.

50% of interviewees consider the residences a non-appropriate function. For the other interviewees the level of adequacy is still low.

Most of surveyed population agree about that the management functions (banking, insurance, private offices, professional offices, etc.) are little adequate (43.9% consider this function little adequate (low level), 34.1% medium-low, 6.14% medium, 4.9% medium-high, 2.4% high).

The production industry is not considered particularly appropriate: 29.3% low, 26.8% medium-low, 24.4% medium, 17.1% medium-high, 2.4% high. On the contrary, Sports Centre is considered highly adequate: 7.5% low, 5% medium-low, 20% medium, 37.5% medium-high, 90% high. The remaining functions are considered on average satisfying.

Scientific and technological center: 22% low, medium-low 9.8%, 14.6% medium, 26.8% medium-high, 26.8% high. Commercial (neighborhood shops, large retail business, etc.): 24.4% low, 19.5% medium-low, 26.8% medium, 22% medium-high, 7.3% higher.

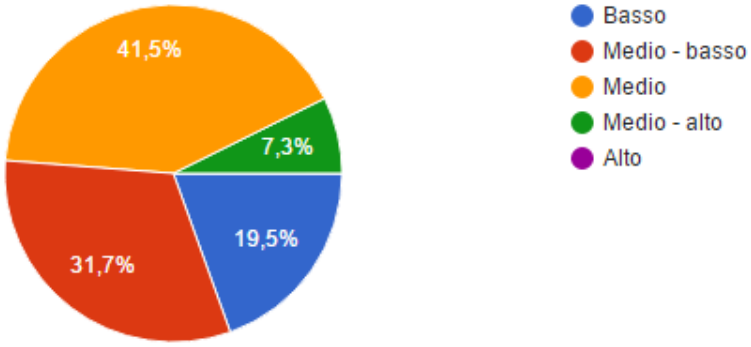
In the fourth section of the survey, the interviewees have had the possibility to indicate some other functions. Some of them have proposed the following functions: artistic and handicraft laboratories, spaces for associations and creative laboratories, the so-called “contenitori culturali”.

All the results of the questionnaire have been processed in the evaluation process (though two software) to include the community point of view.

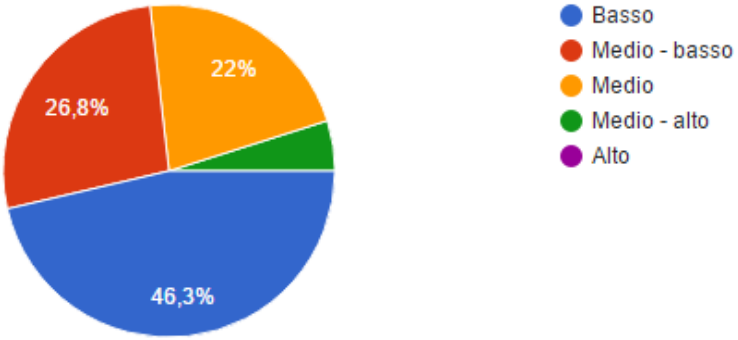
Here below the diagrams of the described outcomes.

PARTE 1:
Esprima il suo grado di soddisfazione relativo alle seguenti questioni

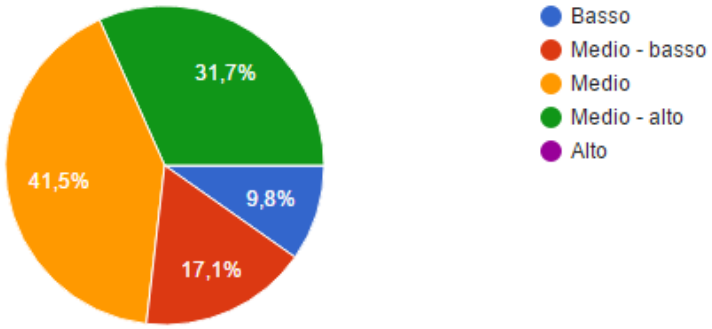
Patrimonio culturale - Stato di conservazione (41 risposte)



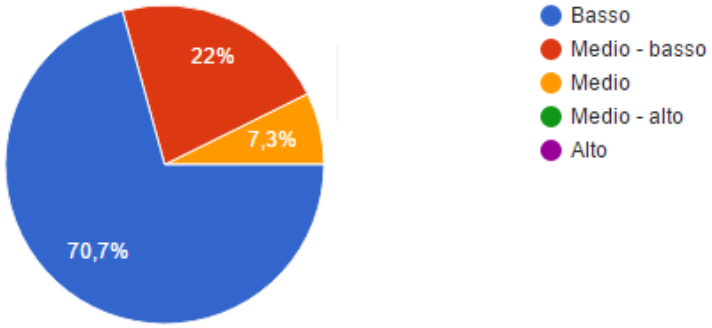
Patrimonio culturale - Fruibilità (41 risposte)



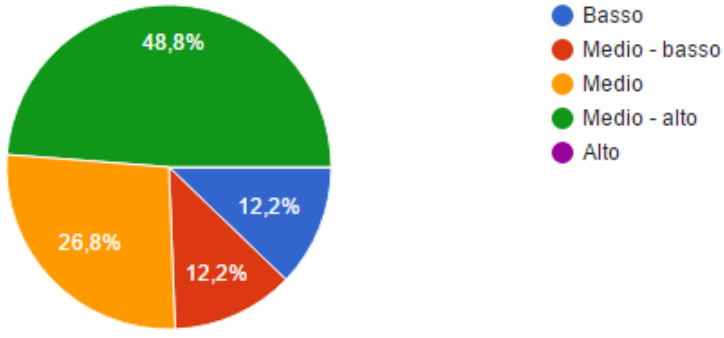
Qualità del Paesaggio Urbano (41 risposte)



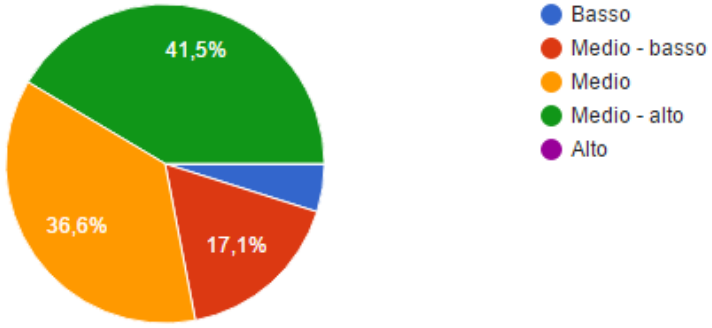
Efficienza dei trasporti (41 risposte)



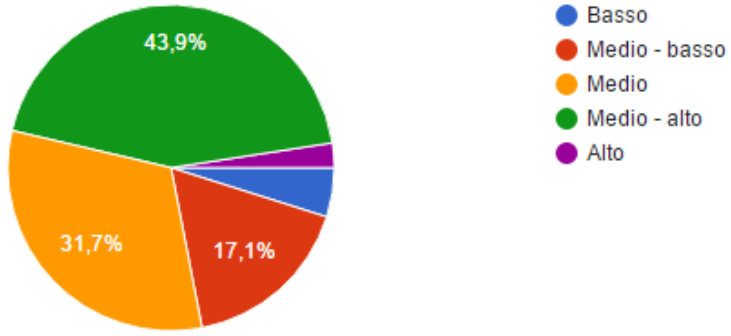
Attrezzature e spazi pubblici (parchi, piazze,...) - Offerta (41 risposte)



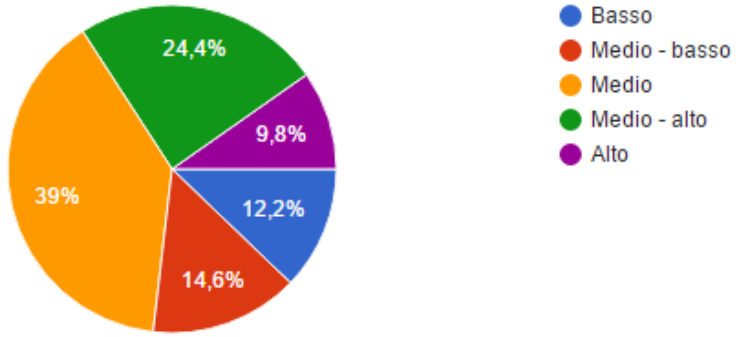
Attrezzature e spazi pubblici (parchi, piazze,...) - Fruibilità (41 risposte)



Attività economiche e servizi - Offerta (41 risposte)

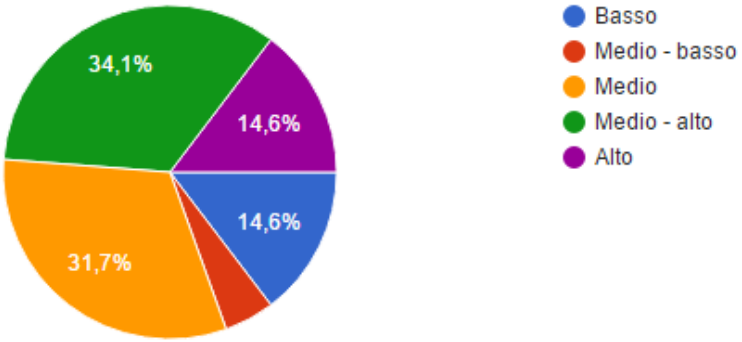


Sicurezza - Percezione del rischio sismico e bradisismico (41 risposte)

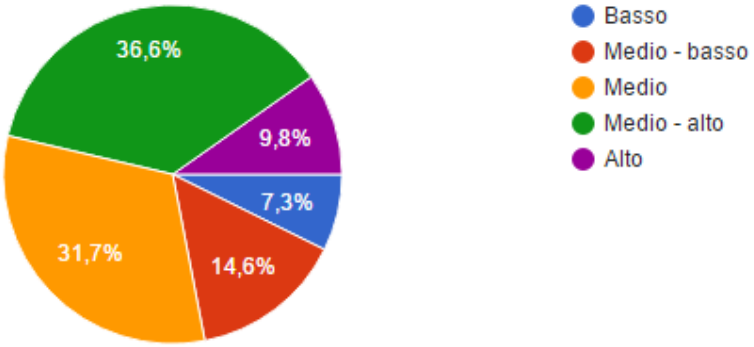


Sicurezza - Percezione di sicurezza connessa all'uso degli spazi collettivi

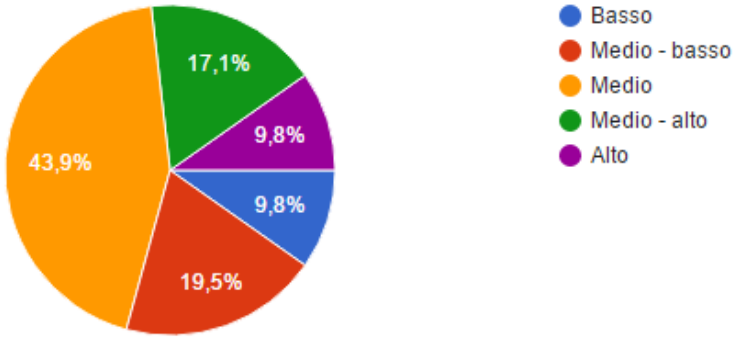
(41 risposte)



Relazione mare-città - Rapporto visivo (41 risposte)



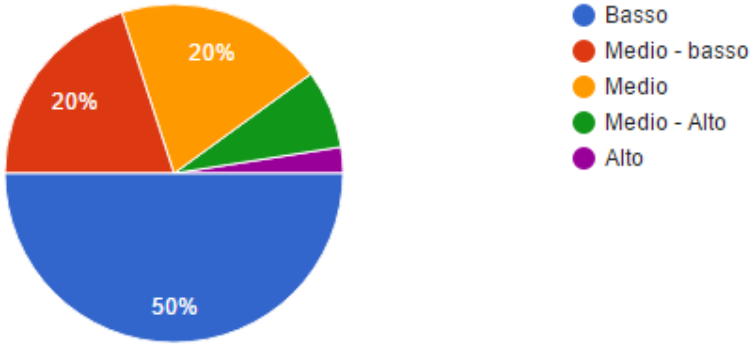
Relazione mare-città - Connessione (41 risposte)



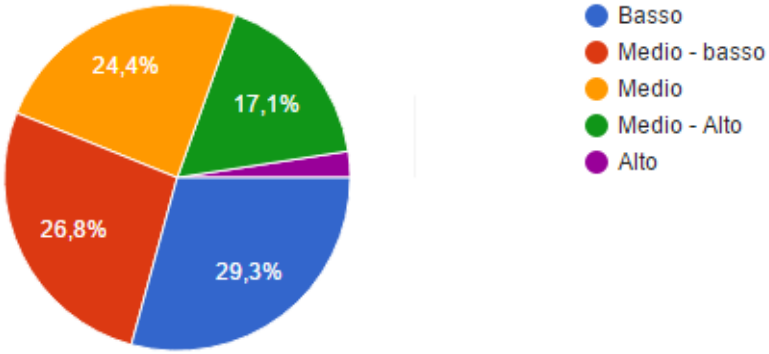
PARTE 2:
Quali sono secondo Lei le questioni che richiedono maggiore priorità di intervento? Disponga le seguenti questioni in ordine decrescente di priorità di intervento (dalla più importante alla meno importante), attribuendo un numero da 1 (la più importante) a 10 (la meno importante).

PARTE 3: Quali delle seguenti funzioni ritiene più adeguata per la riqualificazione dell'area industriale Ex Sofer? Esprima il grado di adeguatezza per ciascuna di esse.

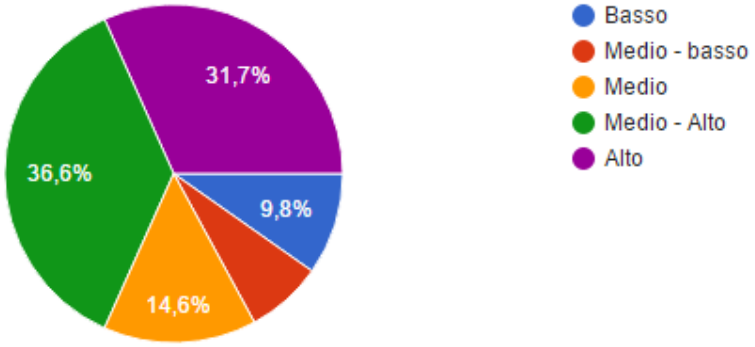
Residenziale (40 risposte)



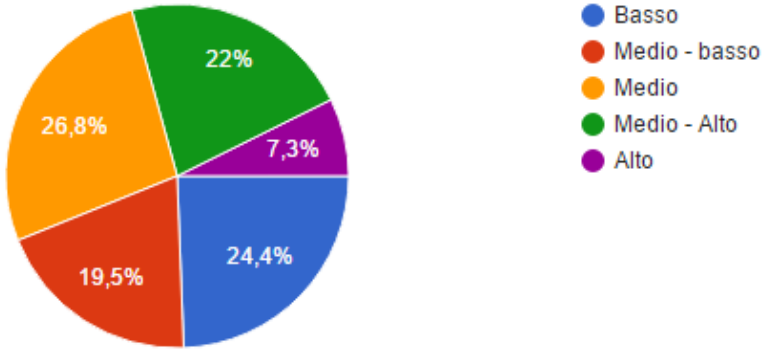
Produttiva (industrie, laboratori artigiani, ecc.) (41 risposte)



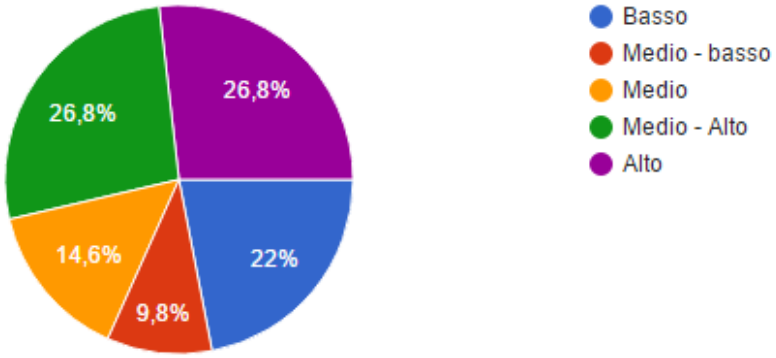
Turistico-ricettiva (Alberghi, residenze turistiche, ecc.) (41 risposte)



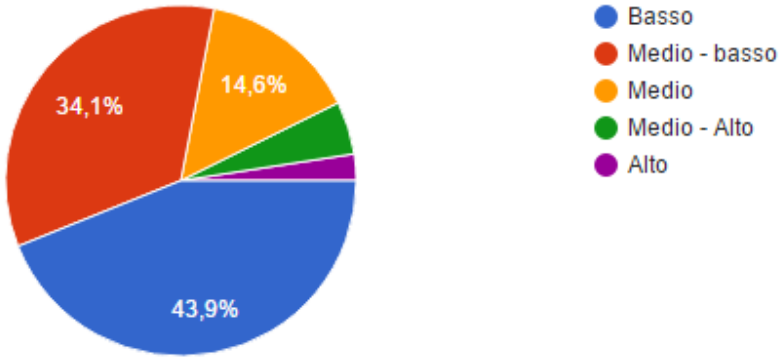
Commerciale (negozi di vicinato, media distribuzione, attività commerciale di grande distribuzione, ecc.)
(41 risposte)



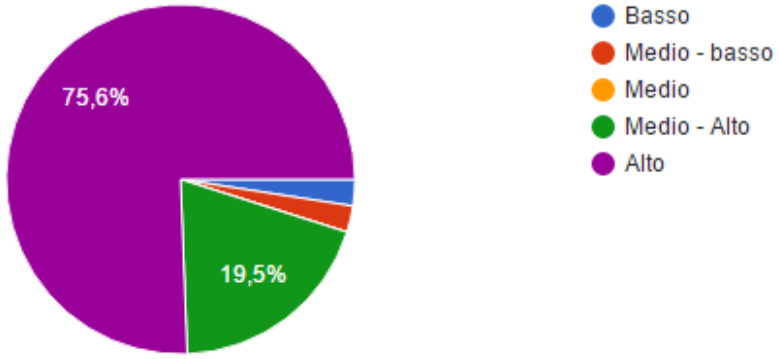
Polo scientifico e tecnologico (attività di ricerca, ecc.) (41 risposte)



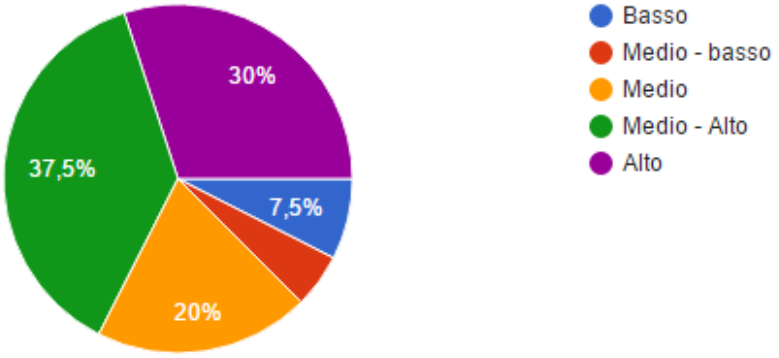
Direzionale (banche, assicurazioni, sedi preposti alla direzione ed organizzazione di enti e società fornitrici di servizi, uffici privati, studi professionali, ecc.)
(41 risposte)



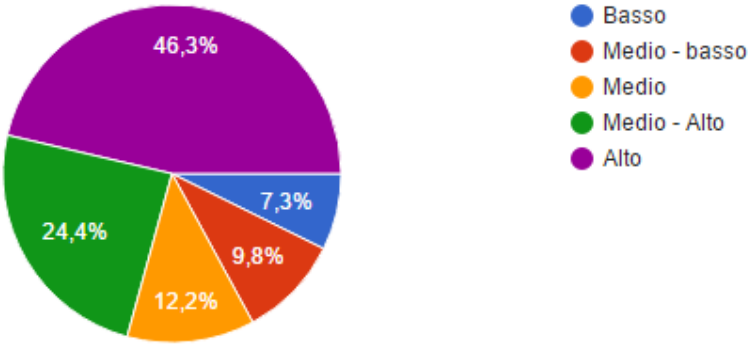
Parco pubblico (41 risposte)



Centro sportivo (40 risposte)



Aree di sosta (parcheggi,..) (41 risposte)



Altro (specificare) (4 risposte)

Laboratorio artigianato artistico
possibilità di avere uno spazio alle associazioni territoriali (anche degli immigrati) per laboratori creativi, per laboratori rivolti ai bambini, ecc
spazi pòlifunzionali socilaità
Contenitore culturale

PARTE 4:
Ritiene ci siano altre questioni da considerare, oltre a quelle sopra individuate? Se la risposta è si, specificare quali.

Stakeholder 1:

"Mobilità sostenibile, segnaletica internazionale (orizzontale e verticale). aumentare le attrattive di benessere culturale.

Abbattimento dei fattori di: Inquinamento (acustico, qualità dell'aria, qualità dell'acqua). Mobilità degli studenti, dei lavoratori e dei turisti solo con mezzi a pannelli solari, biciclettte, o pedonale.

Organizzazione di carico e scarico merci ad orari stabiliti, navette di connessione con aree parcheggio multipiano, connessione con reti ferroviarie e autobus, efficienza dei trasporti pubblici 24h.

Realizzazione di aree attrezzate per convegni, teatro, musica, danza".

Stakeholder 2:

"Dall'esperienza della nostra associazione troviamo tanta difficoltà di organizzare i laboratori e i corsi perché non abbiamo lo spazio e non abbiamo la collaborazione da parte del Comune".

Stakeholder 3:

"contenitori culturali e musei, quasi inesistenti".

Stakeholder 4:

"Riqualificazione del patrimonio immobiliare pubblico anche in chiave di sostenibilità energetica. Rivitalizzazione delle economia locali (agricoltura, artigianato, innovazione sociale) anche attraverso il cooperativismo e il protagonismo sociale.

The above open answers highlight a demand for more public spaces to use as laboratory, associationist and creative spaces. These spaces are linked to the regeneration of human capital and, as underlined in the chapter 3, it is fundamental in city regeneration processes. Associations are able to support (also by incentives) good opportunities, actions and strategies. Regeneration processes are not only related to regeneration of spaces, but firstly to the regeneration of human landscape.

6.7 Multi-group and multi-criteria analysis

The proposed methodological approach includes multiple dimensions in the evaluation process, starting from the multidimensional indicators matrix.

After the previous described step (participation process), key indicators have been extrapolated from the indicators matrix (tables from 7 to 16, chapter 3) in order to evaluate multidimensional impacts of the choices. These indicators are then processed by two software, including both community and experts

opinions/knowledge. Participatory and multi-criteria analysis tools have been integrated in a multidimensional perspective.

After the first (organization) and second (implementation) phases, the processing of data and extrapolation of survey results have been conducted (third phase). The results of this third phase have been then included in the last step for the evaluation process of impacts.

Different stakeholders involvement (institutions, community, etc.) require the use of adequate methodologies and tools in order to support decision-makers in information and knowledge management, such as values, opinions, local interests. A good management of these information contributes to make the process more efficient.

The decision processes based on public and community engagement allow having less technocratic approaches and more participated. A bottom-up approach (Cerreta and Fusco Girard, 2016) allows having results more shared and less conflicting.

Multi-group and multi-criteria analyses have been elaborated for the identification of community's preferences (NAIADE method) and to evaluate multidimensional impacts that different choices (about functions to be localized in the ex-Sofer area for its transformation) can have on the overall objective, that is to increase city multidimensional productivity (MacBeth method). The latter step aims to identify the most appropriate combination of functions that can contribute to the valorization of the area and the resources of the territory.

The first analysis has been processed by the NAIADE method (Novel Approach to Imprecise Assessment and Decision Environments – described in the previous chapter) (Munda, 1995; 2006; NAIADE, 2006).

The input of NAIADE method is represented by different issues/scenarios to be analysed and different stakeholders expressing their opinion in reference to these identified issues.

Three main steps have been processed: the construction of the equity matrix, based on the participative processes (questionnaire); the elaboration of the similarity matrix (showing the degree of similarity of the opinions); the structuring of a “dendrogram”, graphically representing “alliances” or “conflicts” among stakeholders.

The NAIADE method is here used twice:

- to understand community satisfaction in relation to the different proposed issues in order to identify priority of intervention;
- to understand community opinion about the localization of different functions in order to identify the most appropriate combination of them for the regeneration of the study area.

They will analyse one by one.

The first step has been the equity analysis and thus the construction of the equity matrix (figure 27). This is a matrix reflecting the perception of the community in relation to some issues proposed in the survey. It has aimed to understand the community satisfaction level in reference to following issues:

A. state of conservation of cultural heritage;
B. usability of cultural heritage;
C. urban landscape quality;
D. transport efficiency;
E. equipment and public spaces supply;
F. usability of equipment and public spaces;
G. economic activities and services supply;
H. level of seismic and bradiseismic risk perception (safety):
I. level of security perception related to the use of public spaces;
J. Sea-city relationship - visual relationship;
K. Sea-city relationship – physical connection

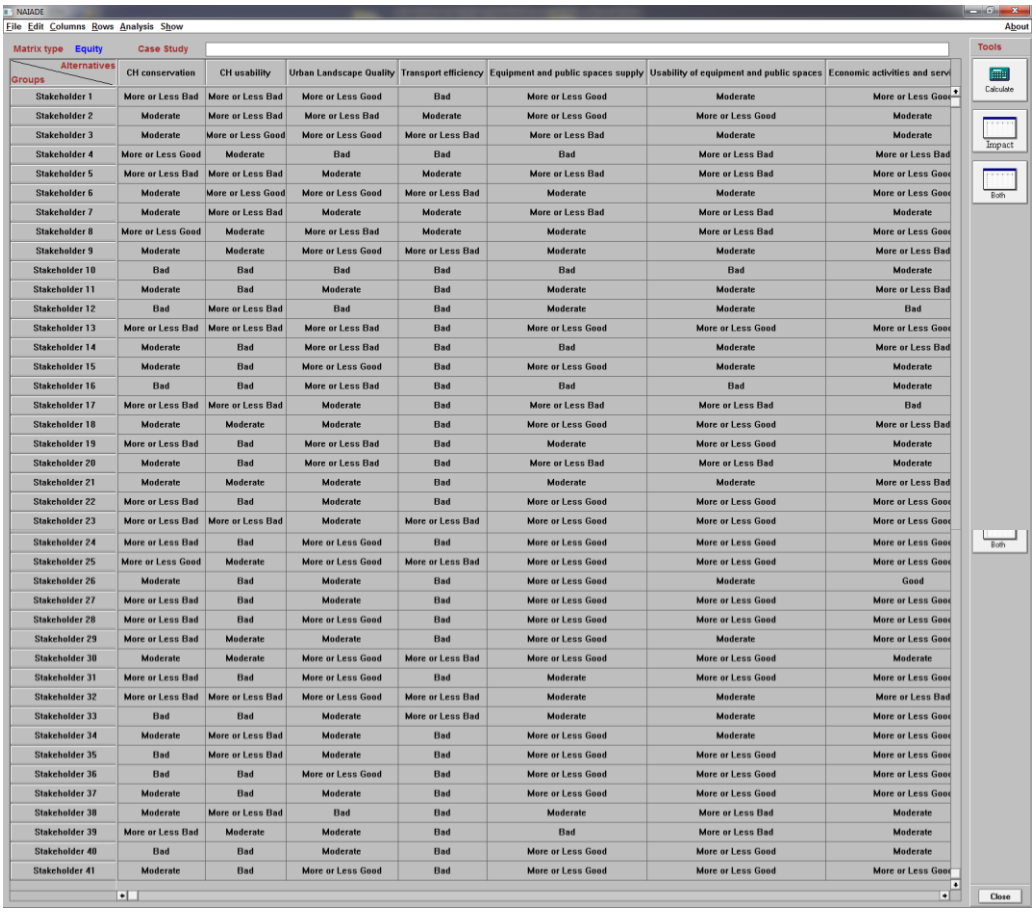
Each interviewee has expressed his opinion about them.

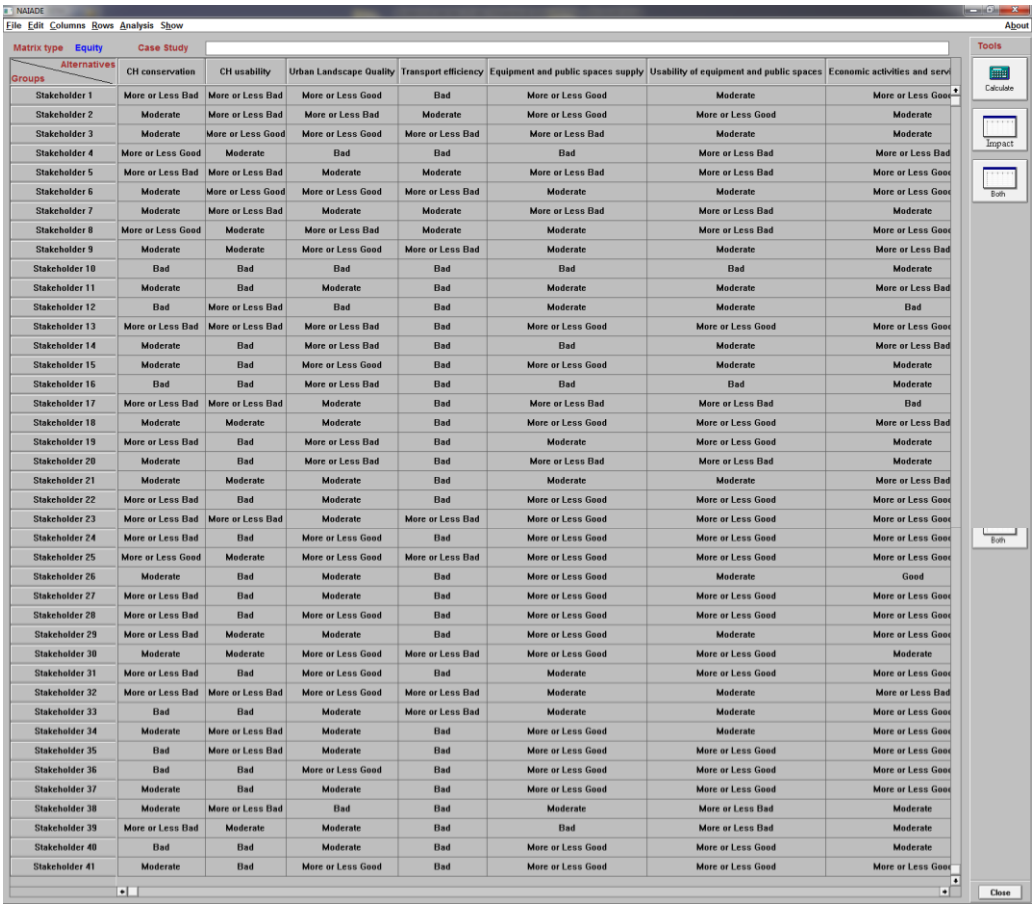
The expressed opinions are qualitative in nature (linguistic expression) and the qualitative scale is the following:

- Bad
- More and less bad
- Moderate
- More and less good
- Good

The stakeholders' opinions have been included in the equity matrix (figure 27) that is used for the equity analysis in NAIADE model. It is important to highlight that the stakeholders' opinions of can only be qualitative (in NAIADE model).

Fig. 27 – Equity matrix - community satisfaction





NAIADE

File Edit Columns Rows Analysis Show

About

Matrix type Equity Case Study

Tools

Calculate

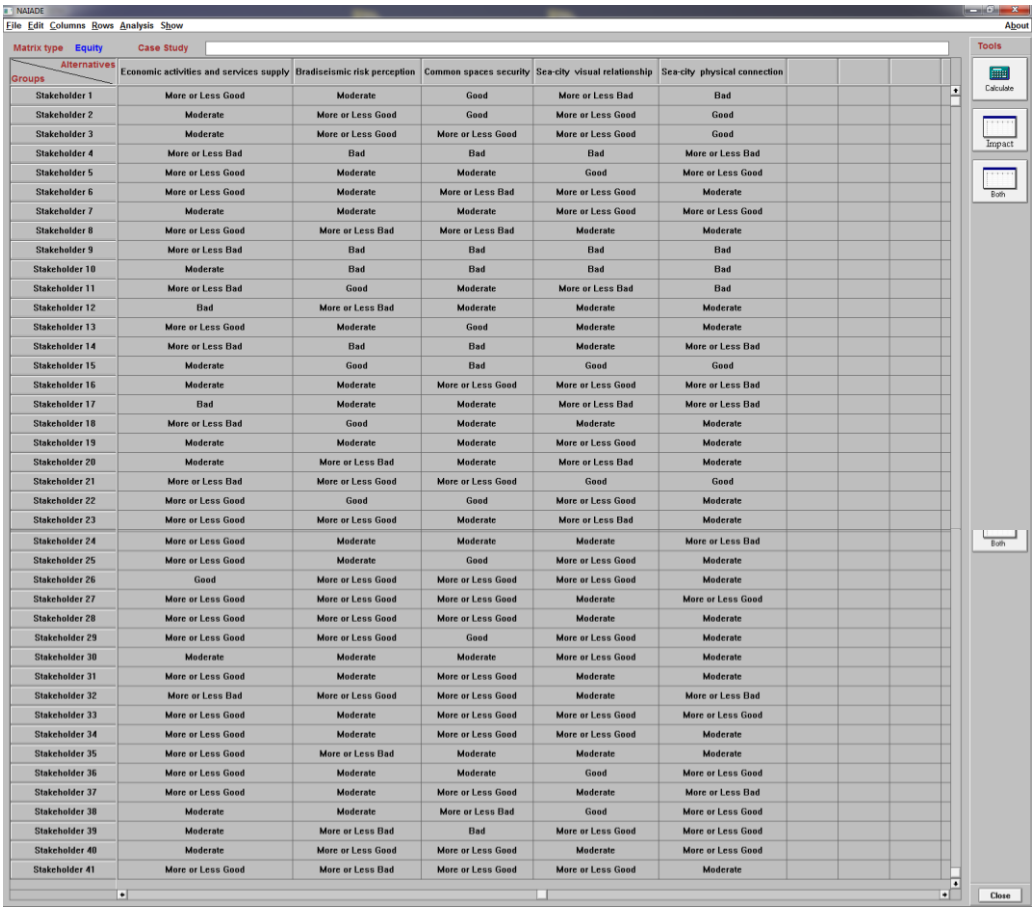
Impact

Both

Both

Close

Groups \ Alternatives	CH conservation	CH usability	Urban Landscape Quality	Transport efficiency	Equipment and public spaces supply	Usability of equipment and public spaces	Economic activities and serv
Stakeholder 1	More or Less Bad	More or Less Bad	More or Less Good	Bad	More or Less Good	Moderate	More or Less Good
Stakeholder 2	Moderate	More or Less Bad	More or Less Bad	Moderate	More or Less Good	More or Less Good	Moderate
Stakeholder 3	Moderate	More or Less Good	More or Less Good	More or Less Bad	More or Less Bad	Moderate	Moderate
Stakeholder 4	More or Less Good	Moderate	Bad	Bad	Bad	More or Less Bad	More or Less Bad
Stakeholder 5	More or Less Bad	More or Less Bad	Moderate	Moderate	More or Less Bad	More or Less Bad	More or Less Good
Stakeholder 6	Moderate	More or Less Good	More or Less Good	More or Less Bad	Moderate	Moderate	More or Less Good
Stakeholder 7	Moderate	More or Less Bad	Moderate	Moderate	More or Less Bad	More or Less Bad	Moderate
Stakeholder 8	More or Less Good	Moderate	More or Less Bad	Moderate	Moderate	More or Less Bad	More or Less Good
Stakeholder 9	Moderate	Moderate	More or Less Good	More or Less Bad	Moderate	Moderate	More or Less Bad
Stakeholder 10	Bad	Bad	Bad	Bad	Bad	Bad	Moderate
Stakeholder 11	Moderate	Bad	Moderate	Bad	Moderate	Moderate	More or Less Bad
Stakeholder 12	Bad	More or Less Bad	Bad	Bad	Moderate	Moderate	Bad
Stakeholder 13	More or Less Bad	More or Less Bad	More or Less Bad	Bad	More or Less Good	More or Less Good	More or Less Good
Stakeholder 14	Moderate	Bad	More or Less Bad	Bad	Bad	Moderate	More or Less Bad
Stakeholder 15	Moderate	Bad	More or Less Good	Bad	More or Less Good	Moderate	Moderate
Stakeholder 16	Bad	Bad	More or Less Bad	Bad	Bad	Bad	Moderate
Stakeholder 17	More or Less Bad	More or Less Bad	Moderate	Bad	More or Less Bad	More or Less Bad	Bad
Stakeholder 18	Moderate	Moderate	Moderate	Bad	More or Less Good	More or Less Good	More or Less Bad
Stakeholder 19	More or Less Bad	Bad	More or Less Bad	Bad	Moderate	More or Less Good	Moderate
Stakeholder 20	Moderate	Bad	More or Less Bad	Bad	More or Less Bad	More or Less Bad	Moderate
Stakeholder 21	Moderate	Moderate	Moderate	Bad	Moderate	Moderate	More or Less Bad
Stakeholder 22	More or Less Bad	Bad	Moderate	Bad	More or Less Good	More or Less Good	More or Less Good
Stakeholder 23	More or Less Bad	More or Less Bad	Moderate	More or Less Bad	More or Less Good	More or Less Good	More or Less Good
Stakeholder 24	More or Less Bad	Bad	More or Less Good	Bad	More or Less Good	More or Less Good	More or Less Good
Stakeholder 25	More or Less Good	Moderate	More or Less Good	More or Less Bad	More or Less Good	More or Less Good	More or Less Good
Stakeholder 26	Moderate	Bad	Moderate	Bad	More or Less Good	Moderate	Good
Stakeholder 27	More or Less Bad	Bad	Moderate	Bad	More or Less Good	More or Less Good	More or Less Good
Stakeholder 28	More or Less Bad	Bad	More or Less Good	Bad	More or Less Good	More or Less Good	More or Less Good
Stakeholder 29	More or Less Bad	Moderate	Moderate	Bad	More or Less Good	Moderate	More or Less Good
Stakeholder 30	Moderate	Moderate	More or Less Good	More or Less Bad	More or Less Good	More or Less Good	Moderate
Stakeholder 31	More or Less Bad	Bad	More or Less Good	Bad	Moderate	More or Less Good	More or Less Good
Stakeholder 32	More or Less Bad	More or Less Bad	More or Less Good	More or Less Bad	Moderate	Moderate	More or Less Bad
Stakeholder 33	Bad	Bad	Moderate	More or Less Bad	Moderate	Moderate	More or Less Good
Stakeholder 34	Moderate	More or Less Bad	Moderate	Bad	More or Less Good	Moderate	More or Less Good
Stakeholder 35	Bad	More or Less Bad	Moderate	Bad	More or Less Good	More or Less Good	More or Less Good
Stakeholder 36	Bad	Bad	More or Less Good	Bad	More or Less Good	More or Less Good	More or Less Good
Stakeholder 37	Moderate	Bad	Moderate	Bad	More or Less Good	More or Less Good	More or Less Good
Stakeholder 38	Moderate	More or Less Bad	Bad	Bad	Moderate	More or Less Bad	Moderate
Stakeholder 39	More or Less Bad	Moderate	Moderate	Bad	Bad	More or Less Bad	Moderate
Stakeholder 40	Bad	Bad	Moderate	Bad	More or Less Good	More or Less Good	Moderate
Stakeholder 41	Moderate	Bad	More or Less Good	Bad	More or Less Good	More or Less Good	More or Less Good



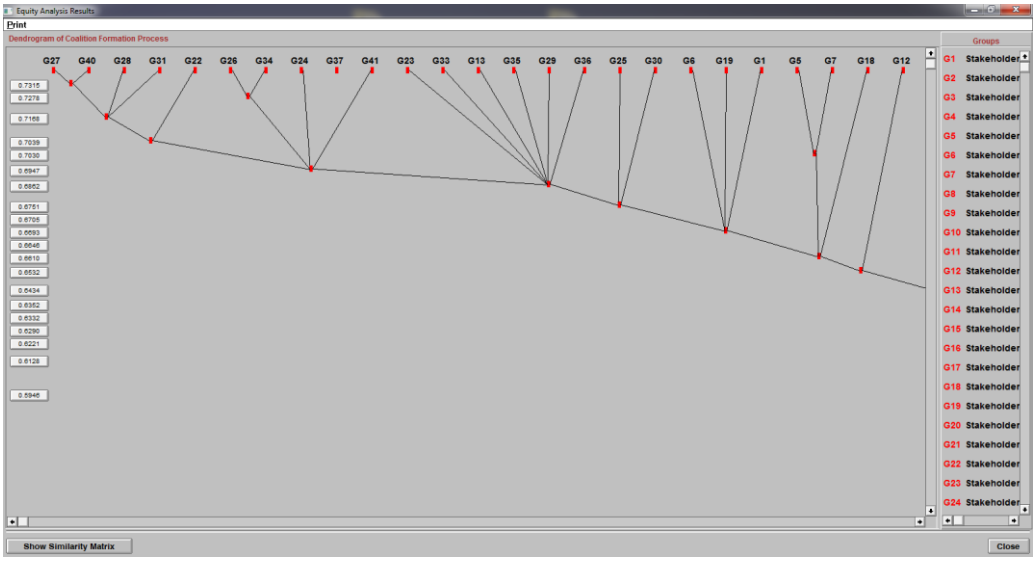
Starting from the equity matrix, it has been possible to analyze the dendrogram (figure 28) that graphically expresses the relation among different stakeholders' preferences. It has provided useful information about the consensus reached for each alternative and about divergences in opinion. Intermediate aggregations are represented in the dendrogram by the red dots.

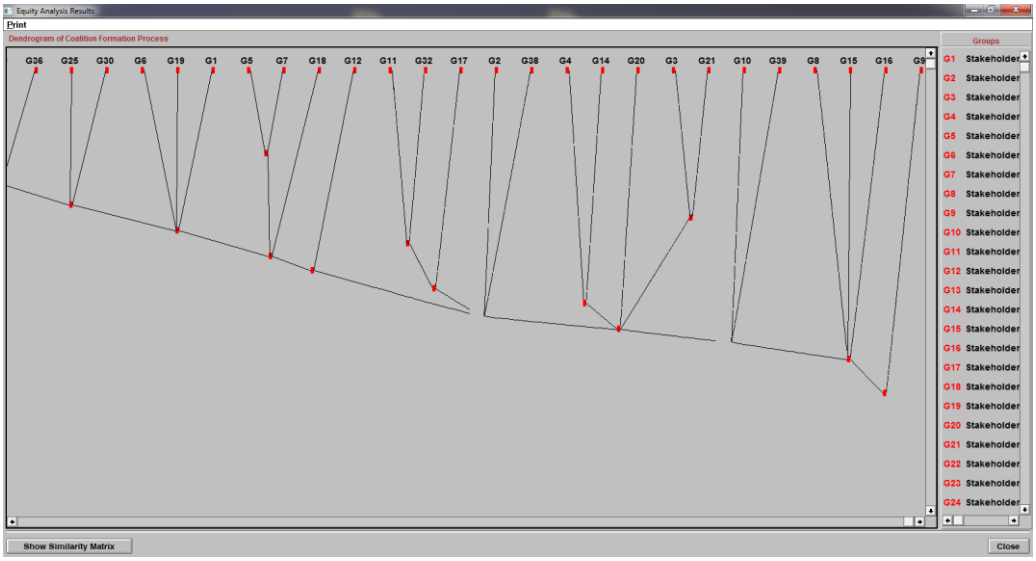
Possible "alliances" or "conflicts" among stakeholders have been resulted from the equity matrix and they are showed in the figure 28 in correspondence with the different levels of consensus.

It can be noted that to a greater consensus number corresponds to a lesser number of "allied" people. In fact, in correspondence with the highest level of agreement (0.7315), only two stakeholders (G27, G40) are "allied". As the consensus level decreases, the number of stakeholders who agrees in a particular definition of

priorities increases. In correspondence with the lowest level of consensus (0.5946), all the different opinions of stakeholders are in agreement.

Fig. 28– Dendrogram - community satisfaction





The program gives back a ranking of preferences of individual stakeholder and how they aggregate up little by little to an overall ranking of convergence of individual preferences.

At intermediate consensus level (0.6464) there is the aggregation of preferences among G16, G19, G9, G41, G28, G17, G24, G12, G22, G1, G21, G35, G3, G15, G2, G38, G10, G29, G39, G37, G5, G33, G25, G14 stakeholders. This ranking is the one that puts these stakeholders agree (figure29). The issues highlighted by blue colour are those for which they are not willing to reach a compromise with the other stakeholders. This ranking highlights both the ranking and the distance between the different positions. The result of this intermediate ranking is the following:

G economic activities and services supply;

I level of security perception related to the use of public spaces;

E equipment and public spaces supply;

F usability of equipment and public spaces;

J Sea-city relationship - visual relationship;

H level of seismic and bradiseismic risk perception (safety);

C urban landscape quality;

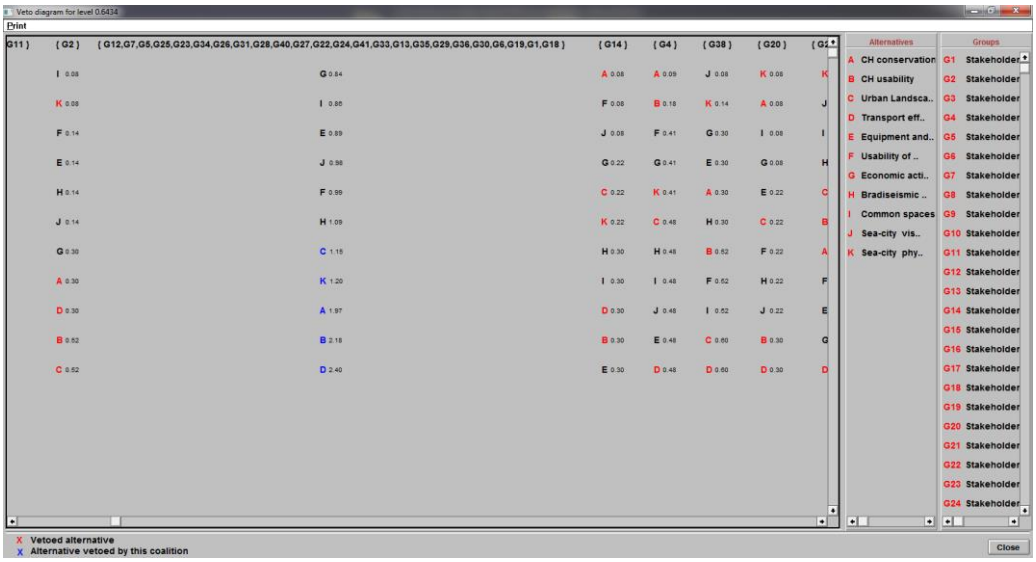
K Sea-city relationship – physical connection

A state of conservation of cultural heritage;

B usability of cultural heritage;

D transport efficiency;

Fig. 29 – Results of the multi-criteria evaluation - Intermediate ranking – community satisfaction



Some significant data have emerged from the analysis of the results obtained through the final output of the analysis of multi-criteria evaluation, namely the classification of the issues more/less satisfying interviewed stakeholders.

The final ranking is elaborated through subsequent aggregations (figure 30) and it lies in correspondence with the level of consensus equal to 0.5946, the lower red dot in the dedrogram that combines all stakeholders' opinions.

The final ranking is the following:

J Sea-city relationship - visual relationship;

G economic activities and services supply;

E equipment and public spaces supply;

H level of seismic and bradiseismic risk perception (safety);

F usability of equipment and public spaces;

I level of security perception related to the use of public spaces;

K Sea-city relationship – physical connection

C urban landscape quality;

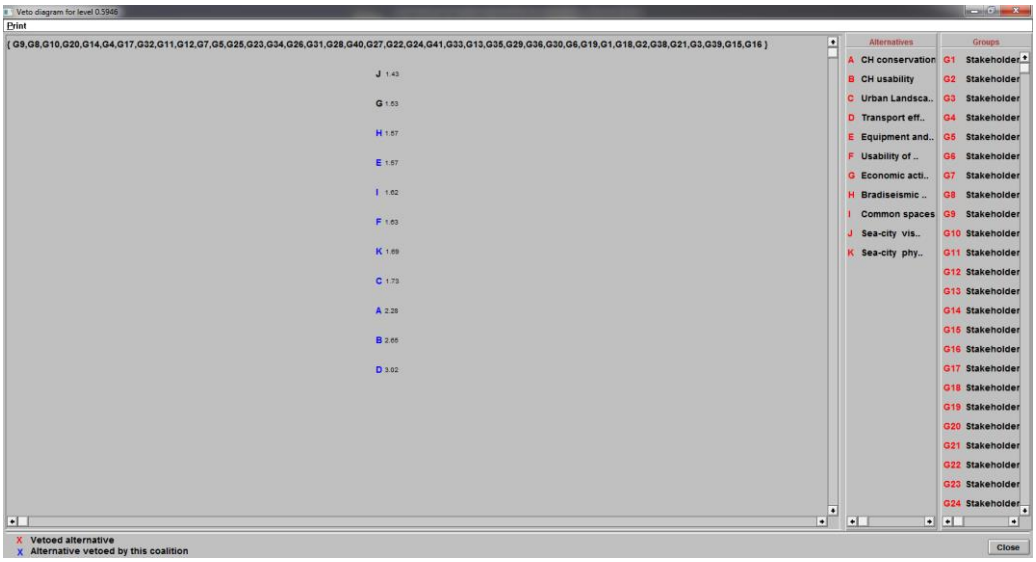
A state of conservation of cultural heritage;

B usability of cultural heritage;

D transport efficiency;

In particular, the final ranking has showed that economic activities and services supply, level of security perception related to the use of public spaces, equipment and public spaces supply are those for which stakeholders consider themselves more satisfied. They are followed at a certain distance from the other issues in this sequence F, J, H, C, K, A. The last two places are occupied by the issues B and D, respectively usability of cultural heritage and transport efficiency. This ranking shows that while stakeholders are very satisfied about use and supply of public spaces, they are very dissatisfied with the transport working and accessibility of cultural heritage. Most of the interviewees think that the efficiency of transport and the fruition of cultural heritage are the issues less satisfying. Community is, instead, satisfied about the economic activity supply and the visual relationship between city and sea. So these are issues to be analyzed and taken into account for the identification of strategic lines of development of the area.

Fig. 30 – Results of the multi-criteria evaluation - Final ranking - – community satisfaction



The final ranking of this matrix allows understanding which issues are more or less satisfying for citizens. This allows guiding the strategic choices for the development of the area and the valorization of the resources of the city.

Through this evaluation process, being the NAIADE inputs data represented by the preferences of the interviewed stakeholders, it has been possible to identify a ranking of shared issues having priority in intervention.

As said before, the NAIADE Method has been used also to understand community opinion about the different possible functions to localize in ex-Sofer area in order to know the demand for functions and supporting, in the following step (by Macbeth software), the identification of the most appropriate combination of them for the regeneration of the study area.

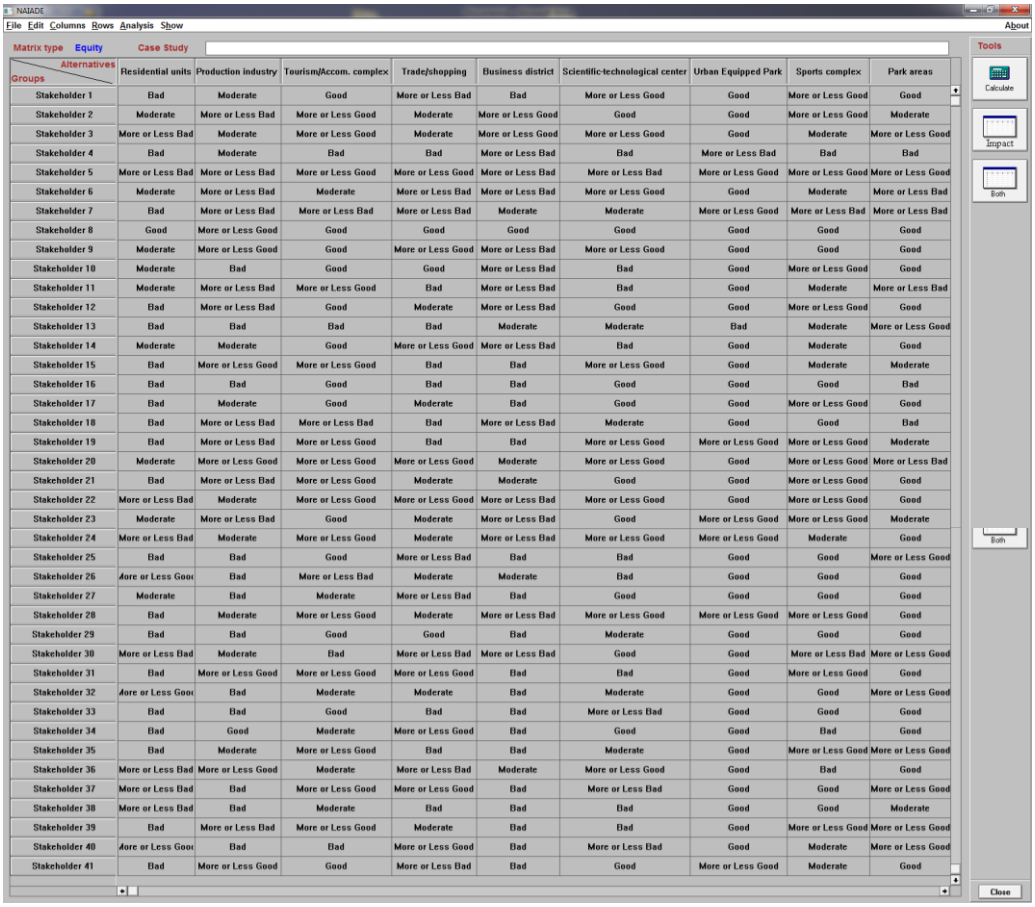
Also in this case the information about different opinions have been collected through the questionnaires administered to representatives of associations and citizens (Annex D).

Each interviewee has expressed his opinion (linguistic expression) about the following functions:

A. Residential units
B. Production industry
C. Accommodation complex
D. Trade/shopping
E. Business district
F. Scientific-technological center
G. Urban Equipped Park
H. Sports complex
I. Park areas

The stakeholders' opinions have been included in the equity matrix (figure 31).

Fig. 31– Equity matrix - alternative functions



NAIADE

File Edit Columns Rows Analysis Show — About

Matrix type: Equity — Case Study

Tools: Calculate, Impact, Both, Both, Close

Groups \ Alternatives	Residential units	Production industry	Tourism/Accom. complex	Trade/shopping	Business district	Scientific-technological center	Urban Equipped Park	Sports complex	Park areas
Stakeholder 1	Bad	Moderate	Good	More or Less Bad	Bad	More or Less Good	Good	More or Less Good	Good
Stakeholder 2	Moderate	More or Less Bad	More or Less Good	Moderate	More or Less Good	Good	Good	More or Less Good	Moderate
Stakeholder 3	More or Less Bad	Moderate	More or Less Good	Moderate	More or Less Good	More or Less Good	Good	Moderate	More or Less Good
Stakeholder 4	Bad	Moderate	Bad	Bad	More or Less Bad	Bad	More or Less Bad	Bad	Bad
Stakeholder 5	More or Less Bad	More or Less Bad	More or Less Good	More or Less Good	More or Less Bad	More or Less Bad	More or Less Good	More or Less Good	More or Less Good
Stakeholder 6	Moderate	More or Less Bad	Moderate	More or Less Bad	More or Less Bad	More or Less Good	Good	Moderate	More or Less Bad
Stakeholder 7	Bad	More or Less Bad	More or Less Bad	More or Less Bad	Moderate	Moderate	More or Less Good	More or Less Bad	More or Less Bad
Stakeholder 8	Good	More or Less Good	Good	Good	Good	Good	Good	Good	Good
Stakeholder 9	Moderate	More or Less Good	Good	More or Less Good	More or Less Bad	More or Less Good	Good	Good	Good
Stakeholder 10	Moderate	Bad	Good	Good	More or Less Bad	Bad	Good	More or Less Good	Good
Stakeholder 11	Moderate	More or Less Bad	More or Less Good	Bad	More or Less Bad	Bad	Good	Moderate	More or Less Bad
Stakeholder 12	Bad	More or Less Bad	Good	Moderate	More or Less Bad	Good	Good	More or Less Good	Good
Stakeholder 13	Bad	Bad	Bad	Bad	Moderate	Moderate	Bad	Moderate	More or Less Good
Stakeholder 14	Moderate	Moderate	Good	More or Less Good	More or Less Bad	Bad	Good	Moderate	Good
Stakeholder 15	Bad	More or Less Good	More or Less Good	Bad	Bad	More or Less Good	Good	Moderate	Moderate
Stakeholder 16	Bad	Bad	Good	Bad	Bad	Good	Good	Good	Bad
Stakeholder 17	Bad	Moderate	Good	Moderate	Bad	Good	Good	More or Less Good	Good
Stakeholder 18	Bad	More or Less Bad	More or Less Bad	Bad	More or Less Bad	Moderate	Good	Good	Bad
Stakeholder 19	Bad	More or Less Bad	More or Less Good	Bad	Bad	More or Less Good	More or Less Good	More or Less Good	Moderate
Stakeholder 20	Moderate	More or Less Good	More or Less Good	More or Less Good	Moderate	More or Less Good	Good	More or Less Good	More or Less Bad
Stakeholder 21	Bad	More or Less Bad	More or Less Good	Moderate	Moderate	Good	Good	More or Less Good	Good
Stakeholder 22	More or Less Bad	Moderate	More or Less Good	More or Less Good	More or Less Bad	More or Less Good	Good	More or Less Good	Good
Stakeholder 23	Moderate	More or Less Bad	Good	Moderate	More or Less Bad	Good	More or Less Good	More or Less Good	Moderate
Stakeholder 24	More or Less Bad	Moderate	More or Less Good	Moderate	More or Less Bad	More or Less Good	More or Less Good	Moderate	Good
Stakeholder 25	Bad	Bad	Good	More or Less Bad	Bad	Bad	Good	Good	More or Less Good
Stakeholder 26	More or Less Good	Bad	More or Less Bad	Moderate	Moderate	Bad	Good	Good	Good
Stakeholder 27	Moderate	Bad	Moderate	More or Less Bad	Bad	Good	Good	Good	Good
Stakeholder 28	Bad	Moderate	More or Less Good	Moderate	More or Less Bad	More or Less Good	More or Less Good	More or Less Good	Good
Stakeholder 29	Bad	Bad	Good	Good	Bad	Moderate	Good	Good	Good
Stakeholder 30	More or Less Bad	Moderate	Bad	More or Less Bad	More or Less Bad	Good	Good	More or Less Bad	More or Less Good
Stakeholder 31	Bad	More or Less Good	More or Less Good	More or Less Good	Bad	Bad	Good	More or Less Good	Good
Stakeholder 32	More or Less Good	Bad	Moderate	Moderate	Bad	Moderate	Good	Good	More or Less Good
Stakeholder 33	Bad	Bad	Good	Bad	Bad	More or Less Bad	Good	Good	Good
Stakeholder 34	Bad	Good	Moderate	More or Less Good	Bad	Good	Good	Bad	Good
Stakeholder 35	Bad	Moderate	More or Less Good	Bad	Bad	Moderate	Good	More or Less Good	More or Less Good
Stakeholder 36	More or Less Bad	More or Less Good	Moderate	More or Less Bad	Moderate	More or Less Good	Good	Bad	Good
Stakeholder 37	More or Less Bad	Bad	More or Less Good	More or Less Good	Bad	More or Less Bad	Good	Good	More or Less Good
Stakeholder 38	More or Less Bad	Bad	Moderate	Bad	Bad	Bad	Good	Good	Moderate
Stakeholder 39	Bad	More or Less Bad	More or Less Good	Moderate	Bad	Bad	Good	More or Less Good	More or Less Good
Stakeholder 40	More or Less Good	Bad	Bad	More or Less Good	Bad	More or Less Bad	Good	Moderate	More or Less Good
Stakeholder 41	Bad	More or Less Good	Good	More or Less Bad	Bad	Good	More or Less Good	Moderate	Good

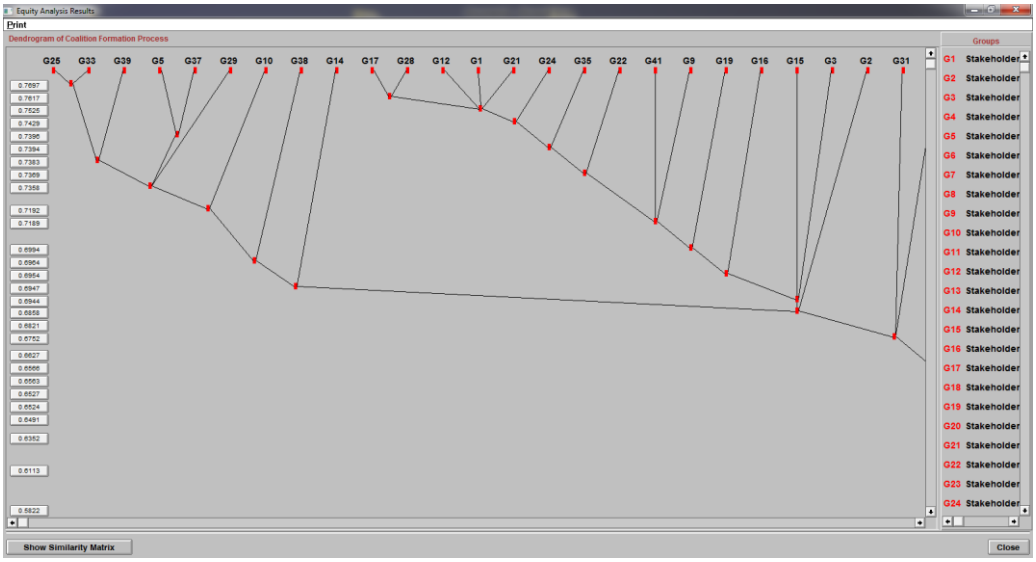
Starting from the equity matrix, it has been analyzed the dendrogram (figure 32) that, as above mentioned, graphically expresses the relation among different stakeholders' preferences.

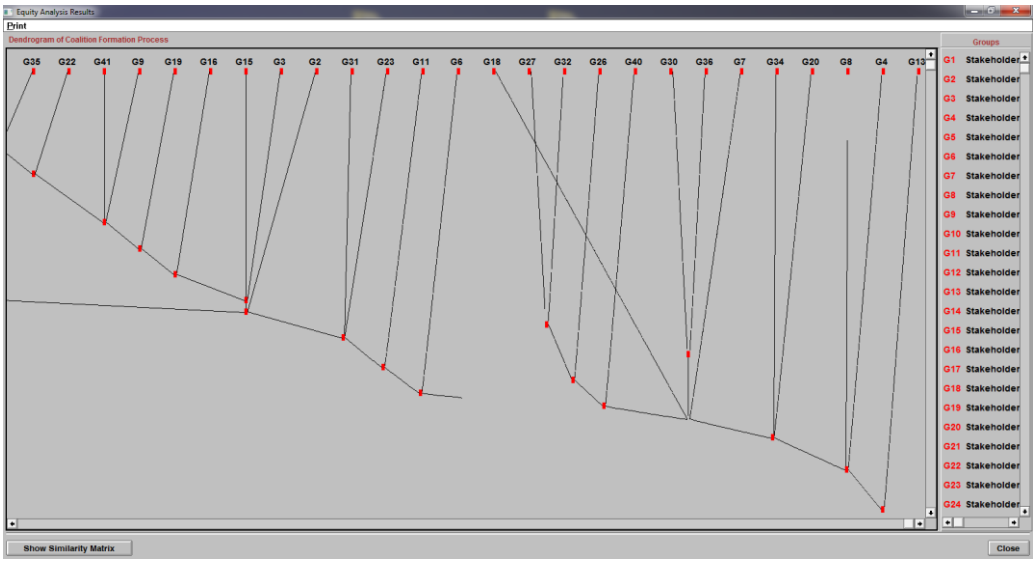
Possible "alliances" or "conflicts" among stakeholders have been resulted from the equity matrix and they are showed in the figure 32 in correspondence with the different levels of consensus

As in the previous analysis, it can be noted that to a greater consensus number corresponds to a lesser number of "allied" people. In fact, in correspondence with the highest level of agreement (0.7697), only two stakeholders (G25, G3) are "allied". In

correspondence with the lowest level of consensus (0.5822), all the different opinions of stakeholders are in agreement.

Fig. 32 – Dendrogram - alternative functions





At intermediate consensus level (0.6857) there is the aggregation of preferences among G38, G14, G10, G29, G37, G5, G39, G33, G25, G19, G16, G15, G41, G35, G24, G17, G1, G28, G12, G21, G22, G9, G3, G2 stakeholders. This ranking is the one that puts these stakeholders agree (figure 33). The issues highlighted by blue colour are those for which they are not willing to reach a compromise with the other stakeholders. This ranking highlights both the ranking and the distance between the different positions. The result of this intermediate ranking is the following:

G_urban equipped park

C_accommodation complex

H_Sports complex

I_Park areas

F_Scientific-technological center

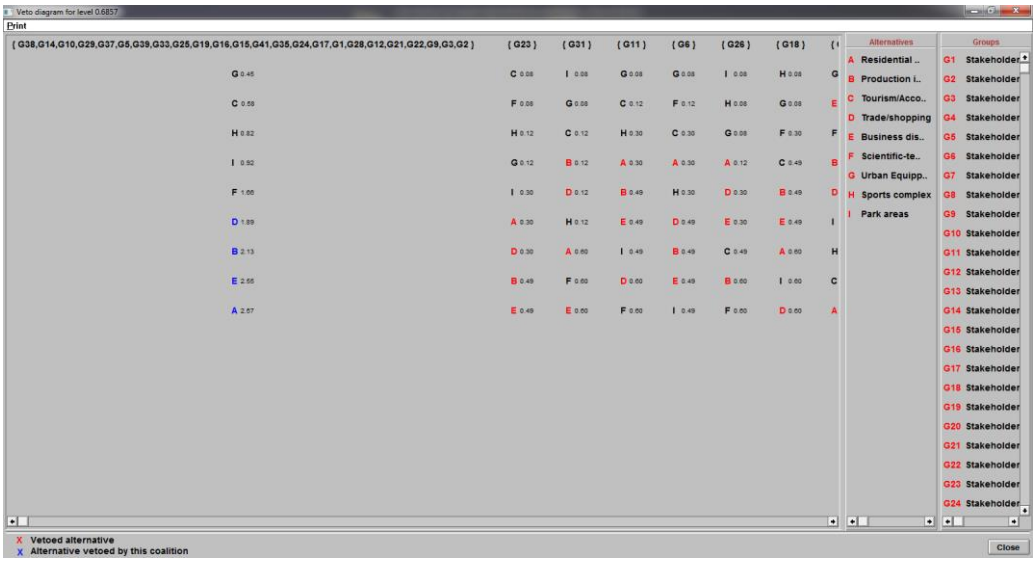
D_Trade/shopping

B_Production industry

E_Business district

A_Residential units

Fig. 33 – Results of the multi-criteria evaluation - Intermediate ranking - alternative functions



The final output returns the ranking of stakeholders' preferences about the functions to be located in the study area. It is elaborated through subsequent aggregations (figure 34) and it lies in correspondence with the level of consensus equal to 0.5822, the lower red dot in the dedrogram that combines all stakeholders' opinions.

Analysing the final red point of the dendogram, that is the final aggregation, the results do not change drastically. In fact, the final ranking remains broadly the same, except for a few changes in position. It is the following:

G_Urban Equipped Park

H_Sports complex

I_Park areas

C_Accommodation complex

F_Scientific-technological center

D_Trade/shopping

B_Production industry

A_Residential units

E_Business district

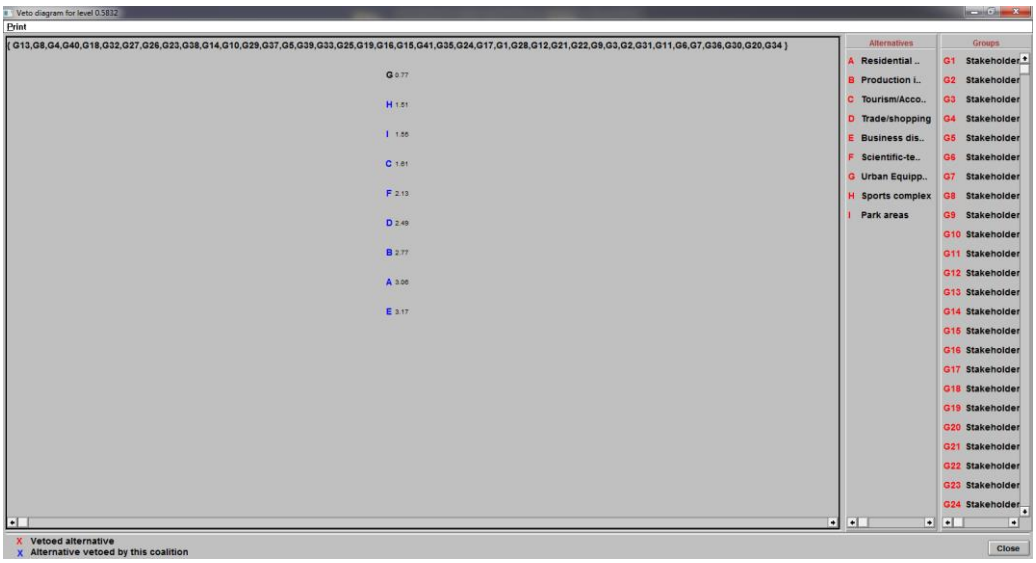
In particular, the final ranking has highlighted that the interviewed stakeholders agree that the function G (urban equipped park) is the most appropriate for the redevelopment of the ex-Sofer area.

This function is followed by the sport complex, parks areas accommodation complex.

The last two places are occupied by the function A and E, respectively residential units and business district, that are considered the less adequate.

This ranking shows that there is a greater demand for functions related to a collective/social use of the area. The ranking position of park area function reflects the result of the first analysis about the degree of community satisfaction related to the transport efficiency.

Fig. 34 – Results of the multi-criteria evaluation – Final ranking – alternative functions



The different functions are not alternative. The program shows only a preferability ranking and the goal is to identify the functions characterized by a higher level of consensus among stakeholders.
The final ranking is similar to the outcome of the intermediate one giving greater strength to the result.
Through this evaluation process, it has been possible to identify a ranking of functions shared with the community just because the NAIADE inputs data are represented by the preferences of the interviewed stakeholders.
This output has been useful for identifying the weights to be assigned to alternative functions in the following step of the evaluation process.

Once identified possible functions and community preferences, the following step has been carried out to understand what combination of functions is more appropriate and have more impacts on the city multidimensional productivity. The overall objective is to understand what functions are able to better valorize the ex-Sofer area and the territory resources, that is the functions able to produce more benefits for the city of Pozzuoli in the multidimensional perspective highlighted in the previous chapters. To this end, a multi-criteria decision support system has been used: the MacBeth method (Bana e Costa et al., 1999).
As described in the chapter 5, MACBETH (Measuring Attractiveness by a Categorical Based Evaluation Technique) is an interactive approach that quantifies the attractiveness of options (functions) starting from only qualitative judgements about differences in reference to a global goal (the above-mentioned aim).
The functions list has been deduced from the Urban Implementation Plan, the interviews and discussions with representatives of institutions and technical-professional organizations, and from the outputs of NAIADE method. They are the follows:

F1	**Urban Equipped Park** (beach resort, equipped seaside, heliotherapy, thalassotherapy, kiosks and bars, place of worship, green public area)
F2	**Park areas**
F3	**On-site command for the Archaelogical Park of the Flegrea Area**
F4	**Shipping station** (porter service; information point, taxi and car rental service, shuttle service to the city center; small refreshment bar; finance and police; harbour master's office; artistic events)
F5	**Educational tourstic pole**
F6	**Tourist service point** (info point, other tourist services) and **park areas for tourist terminal** (tourist bus, guided visits to the sea – submerged park)
F7	**Accommodation complex** (hotel, residence, spa/baths, seaside resort, meeting hall, garages)
F8	**Polyfunctional complex** (retail, leisure time, catering, sport, garages and parking area)
F9	**Sports complex**
F10	**Scientific-technological center**
F11	**Sailing center** (with sailing technological center for temporary junior and athlete residence)
F12	**Sail Accademy** (accademy, Savoia Club, park areas)
F13	**Museum Center** (related to cultural and natural heritage)
F14	**Sail boat dock** (a dock with a small service building and a connected park area; a sheet of water for docking, dock services, parking)

F15	**Production industry** (industries, handicrafts, etc.)
F16	**Residential units**
F17	**Business district** (Banking, insurance, private offices, professional offices, etc.).

The first step of this evaluation process has been the structuring of the evaluation problem, that is the identification of the criteria. These criteria address the issue in a cross-cutting and multidimensional way and they have been identified consistent with the categories described in the chapter 3. In fact, the criterion, on which basis the impacts have been evaluated, corresponds to the 9 multidimensional categories identified in the general proposed framework (cfr. Chapters 3 and 5):

- Tourism and Recreation
- Creative, cultural and innovative activities
- Typical local productions
- Environment and Natural Capital
- Community and Social Cohesion
- Real estate
- Public financial return
- Welfare/wellbeing
- Cultural value of properties/landscape.

The aim is to understand the impact of each function in relation to these 9 criteria, and then to the overall objective (to increase city productivity)

A tree of criteria is generated (figure 35). For each criterion, selected sub-criteria are identified. They represent the key indicators extrapolated from the indicators matrix proposed in the chapter 3. They are multidimensional benefits that allow considering the multidimensional impacts of landscape transformation/regeneration. The selected key indicators are:

- Tourists in hotels and non-hotel accommodations
- Number of visitors
- Passengers to the port (unloading and loading)
- Number of employees in local active units (tourism sector)

- Number of active enterprises by type of activity
- Number of employees in local active units number (typical and local production)
- Percentage of employees by sector on the total number of employees

- Number of farms
- Number of educational farms
- Number of wine-firm

- Amount of cars
- Amount of bus
- Municipal waste production per capita

- Number of non-profit active units
- Number of volunteers in non-profit units
- Index of propensity to cooperation

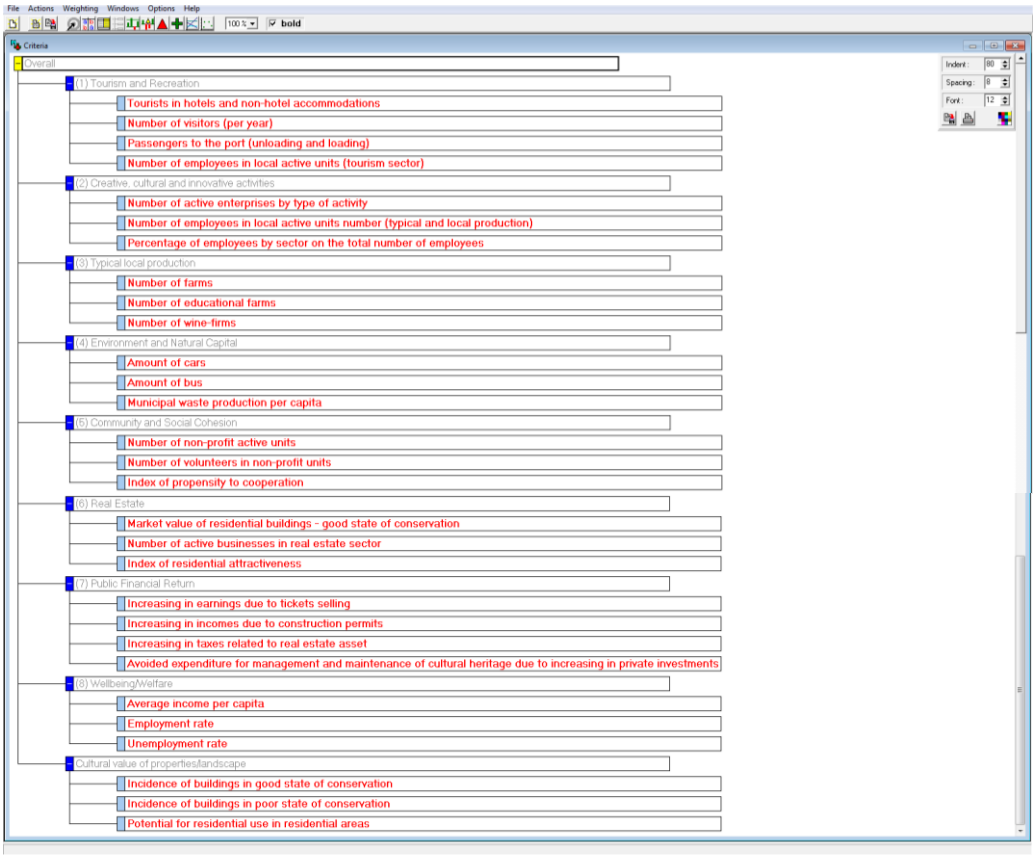
- Market value of residential buildings - good state of conservation
- Number of active businesses in real estate sector
- Index of residential attractiveness

- Increasing in earnings due to tickets selling
- Increasing in incomes due to construction permits
- Increasing in taxes related to real estate asset
- Avoided expenditure for management and maintenance of cultural heritage due to increasing in private investments

- Average income per capita
- Employment rate
- Unemployment rate

- Incidence of buildings in good state of conservation
- Incidence of buildings in poor state of conservation
- Potential for residential use in residential areas

Fig. 35 – Tree of criteria and sub-criteria



Considering the multidimensional nature of the issue (as highlighted in all the previous chapters), these criteria deal with the overall objective in a cross-cutting and

multidimensional approach, taking into account economic, social, environmental and cultural aspects.

Therefore, a performance scale is identified (Sanchez-Lopez et. al, 2011).

As described in the previous chapter, a "descriptor" of impacts has been associated with each criterion (and thus sub-criterion) in order to make them operational. A descriptor is "an ordered set of (quantitative or qualitative) plausible impact levels".

The descriptors allow producing a comprehensive qualitative description of performance. It is produced by the association performance levels to the project.

Defined the performance level, it is necessary to identify the value in attractiveness corresponding to this performance. A value function is necessary to evaluate the attractiveness of each criterion in the model. The difference in attractiveness between the scored of two performances "reflects their difference of attractiveness for the evaluator."

A multidimensional constructed descriptor is very useful to produce a comprehensive qualitative description of performance, by associating one of the scale's performance levels to the project being evaluated. Yet, as we said before, one thing is the projects performance and quite another is the value (or attractiveness) that such a performance conveys. In order to measure the attractiveness of projects, it is required to construct a value function for every evaluation criterion in the model.

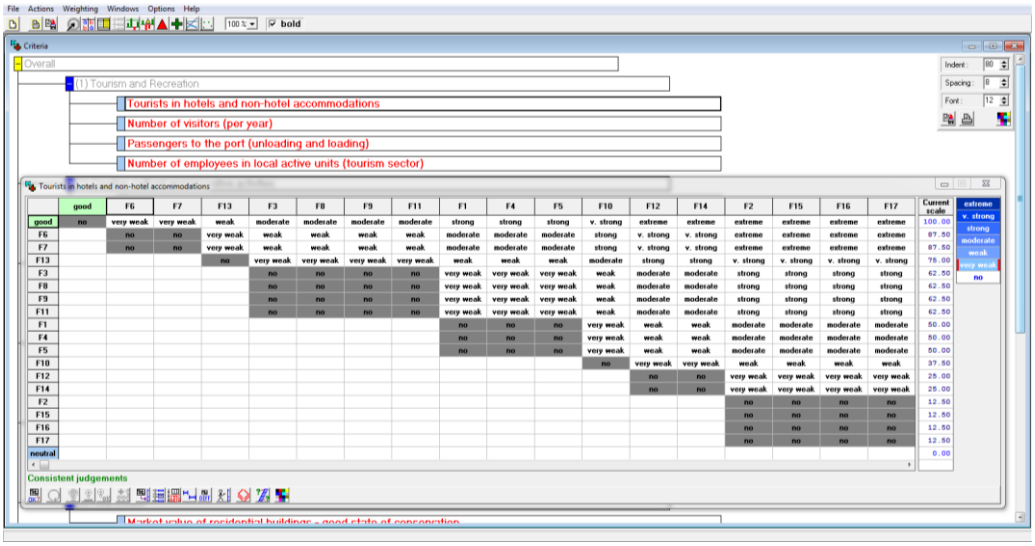
The resulting rating scale should be constructed in such a way that the difference between the scores of two performance levels reflects their difference of attractiveness for the evaluator. In contrast, MACBETH software allows constructing a value function derived from qualitative judgement around the difference in attractiveness "between every two performance levels of the scale".

The comparison in attractiveness is elaborated using the MacBeth semantic categories illustrated in the chapter 5 (no difference, very weak, weak, moderate, strong, very strong, extreme).

Two reference levels have been identified: good and neutral. They respectively represent a "good function" and a "neutral function" (that is neither attractive nor repulsive). They help to better understand the criteria, making the reference levels more explicit. This also allows using a criteria-weighting procedure.

The aggregation is firstly applied for each sub-criterion sharing the same parent criterion. A judgement matrix is elaborated making pairwise comparisons among the different functions with respect to each indicator (sub-criterion) (figure 36).

Fig. 36 - Judgement matrix of pairwise comparisons among the different functions



The above judgement matrix represents the community and expert qualitative judjgement about differences in attractiveness.

Once all judgements have been put into the matrix, the software verifies its consistency with the judgments already inserted into the matrix through a mathematical programming algorithm (Bana e Costa et al. 2005). After the elaboration of consistent matrix, the software uses a linear program to suggest a preliminary value function (the so called MACBETH scale).

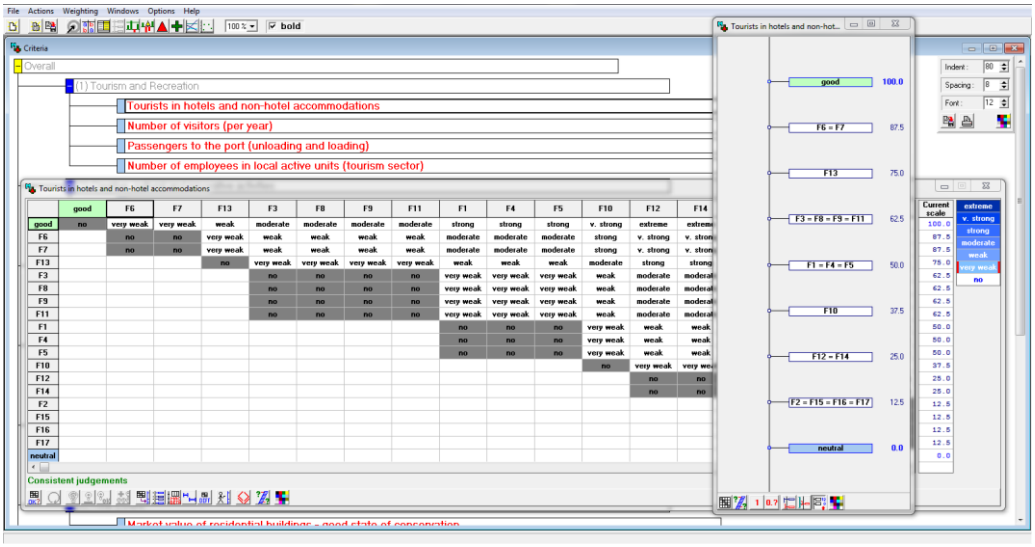
A numerical scale is generated consistent with all judgements. The functions have been classified in a value "thermometer", on a scale from 100 value (good preference) to 0 value (neutral preference). The 100 value corresponds to the good

solution, the 0 value to the neutral one. This MacBeth scale represents the impacts that each function has on the individual sub-criterion (figure 37).

For example, in the following figure the thermometer show the functions that mainly impact on the *tourist in hotels and non-hotels accommodation* of the *tourism and recreation* category.

Tourist service point and *park areas for tourist terminal* and *Accommodation complex* are the functions with more impact for the considered category (87.5 of the Macbeth scale). They are following by the function *Museum Center* (75.0 of the Macbeth scale). *On-site command for the Archaelogical Park of the Flegrea Area, Polyfunctional complex, Sports complex, Sailing center* functions have the same value, 62.5 of the Macbeth scale. They are followed by *Urban Equipped, Park Shipping station, Educational tourstic pole functions (50.0 Macbeth sclale).* More distant with 37.5 value there is the *Scientific-technological cente. It is followed by Sail Accademy and Sail boat dock*

Fig. 37 – Thermometer



This numerical scale is generated for each sub-criterion. Then they are aggregated for each criterion.

These partial values have been aggregated again in order to calculate the overall attractiveness of the functions, that is which functions are more attractive to achieve the overall objective (to increase the multidimensional productivity). So, after this first ranking, the program allows having a final ranking of the functions in reference to the overall criteria (figure 38).

To this end, it has been necessary to give weights to individual functions.

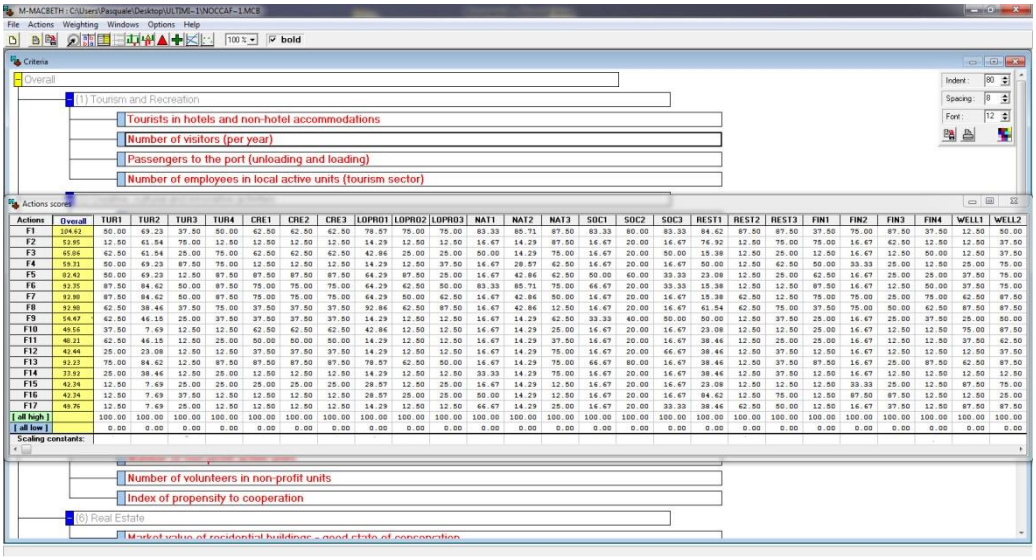
These weights are deduced from the integration of participatory process (above analysed) and expert knowledge. The functions are gathered into three groups, from the group characterized by a major weight to the group characterized by a lower weight:

- First group: Cultural value of properties/landscape, Tourism and Recreation
- Second group: Creative, cultural and innovative activities, Community and Social Cohesion, Welfare/wellbeing, Typical local productions
- Third group: Environment and Natural Capital, Real estate, Public financial return

To evaluate weights through MacBeth approach, qualitative judgements have been given. The judgements are expressed by using the MacBeth semantic categories (very weak, weak, moderate, strong, very strong, extreme difference of attractiveness). Each judgement reflects a view of difference in attractiveness. They are grouped in a matrix. If two criteria have the same weight, they are anyway introduced in the matrix under the category “no”.

The impacts of each function for each criterion and sub-criterion have been determined. After the phase referred to each fundamental criteria and the attribution of weights, the final aggregation phase has been elaborated. So, a ranking of preferences referred to the overall goal has been processed. It is shown in the figure 38.

Fig. 38 – Overall ranking



Tab. 18 – Final ranking and relative scale

Ranking	Function	MacBeth scale
F1	Urban Equipped Park	104,62
F7	Accommodation complex	92,98
F8	Polyfunctional complex	92,98
F6	Tourist service point and park areas for tourist terminal	92,35
F13	Museum Center	92,23
F5	Educational tourstic pole	82,42
F3	On-site command for the Archaelogical Park of the Flegrea Area	65,86
F4	Shipping station	59,31
F9	Sports complex	54,47
F2	Park areas	52,95
F17	Business district	49,76
F10	Scientific-technological center	49,56
F11	Sailing center	48,21
F12	Sail Accademy	42,44
F15	Production industry	42,34
F16	Residential units	42,34
F14	Sail boat dock	33,92

As the final ranking shows (table 18), the function having a greater impact on the overall goal is the equipped green park. It is followed by the touristic and accommodation activities (consistently with the stakeholders' opinions emerged by NAIADE).

As the overall result shows (overall thermometer), there is no function resulting neutral (0 value) nor unsatisfactory (negative value). There is a function resulting more attractive respect to the level good (100 value): it is the equipped green park. It fully satisfies each criterion.

There are also five functions considered close to the "good solution" in the achievement of the overall goal: accommodation complex (92,98/100), polyfunctional complex (92,98/100), tourist service point and park areas for tourist terminal (92,35/100), museum center (92,23/100).

The function having less impact on the overall goal is the sail boat dock. Also the production industry (42,34/100) and residential units (42,34/100) are considered not too much appropriate to valorize the area and the territory resources.

It is interesting to note that functions related to the valorization of local cultural resources (i.e. *museum center*, *tourist service point*) lie in the upper part of the ranking. The functions related to the tourism sectors are also considered appropriate for the valorization of the site and territory resources.

The elaborated evaluation process is based on the assessment of the benefits that refunctionalization of the study area can produce on the entire city of Pozzuoli. These benefits are identified in a multidimensional perspective, in accordance to the perspective of the Historic Urban Landscape approach.

These results suggest that the socio-economic revitalization of the city of Pozzuoli has to start just from the enhancement/valorization of endogenous resources of the territory and their increase in knowledge (Tourist service; Museum Center; On-site command for the Archaeological Park of the Flegrea Area; educational tourstic pole). The necessity to implement the promotion and management of resources of the territory emerged. These functions also allow the promotion of the tourism sector which could become the main source of wealth of the city, considering that it is

characterized by “a treasure” of cultural and natural resources whose potential is not widely exploited today. These resources are able to produce multidimensional benefits for the city.

The necessity to make cultural and natural resources more affordable and their valorization are emerged as priority actions (also from the questionnaires). This shows how the community is aware of the landscape value in which it lives.

The evaluation tools have been used as an effective and shared (by the community) interpretative key, in order to identify the likely impacts of transformation processes and, at the same time, to foster the conservation and valorization of local resources.

The evaluation tools used have allowed integrating preferences and community perceptions in the decision-making process. The knowledge of landscape, expressed through the experience of those who live and transform it every day, is a fundamental aspect of the evaluation process. Community involvement is a support to the decision-making process and achieves to help decision-makers and stakeholders in taking more effective decisions regarding land use planning.

The community preferences play a key role, but obviously they cannot be considered as the only source of knowledge for the identification of priority actions. The result of the case study should be interpreted as an integration of studies in the literature, expert judgment and community judgment. The involvement of both expert and community knowledge guarantees the higher level of acceptability of the results. Therefore, it can be assert that the integrated analysis of multi-criteria methods (De Toro and Iodice, 2016) and participatory tools has enabled to include perceptual aspects in the evaluation process.

Therefore, this hybrid approach, combining multiple dimensions, allows constructively dealing with the understanding of the decision-making context, the identification of the most productive functions (in multidimensional terms) and the identification of multidimensional and synergistic developmental processes.

The application to the case study allowed verifying the validity of the proposed approach and the possible developments in terms of scalability and adaptability in other contexts.

6.7 Conclusions

The United Nations efforts to move towards a poverty reduction and sustainable development are based on the principle of equitable and participatory Sustainable Human Development (placing people the main object of development).

New thinking models (humanistic and ecological paradigm) have implications for the identification of more sustainable policies and strategies.

In order to make this principle operational, a transdisciplinary and multidimensional approach in development matters and appropriate evaluation processes are necessarily required.

This represents a challenge to traditional evaluation processes (such as cost-benefit analysis) to address the multidimensional nature of the matter.

The present research deals with the evaluation issue in choices at urban and territorial scale, particularly concerning the areas characterized by the existence of natural and cultural capital.

The thesis has aimed to make operational (in the evaluation field) concepts driving sustainable transformations of cities and territories. Its purpose is to put into operational terms concepts and categories identified by international organizations, otherwise at risk of being confined to a purely abstract reflections.

The proposal of an evaluation approach and an indicators matrix to support the impacts evaluation of cultural heritage has been the main question of present research work.

Transformation processes of the cities have been placed into a new framework, the circular economy. As described in the fourth chapter, it allows overcoming the structural limits of the economic paradigm that is indifferent to the consumption of natural and energy resources.

Furthermore, the hybrid nature of places has been underlining, overcoming the traditional opposition mono/multi-functional.

The thesis does not intend to propose a new evaluation method, but rather an evaluation process, capitalizing the richness of existing tools. It aims to provide a tool

for supporting decision-makers in the evaluation of impacts of alternative projects at different scale.

The present study has proposed a methodological approach based on the combination of participatory and multi-criteria analysis tools in a multidimensional perspective. This proposed methodological approach, starting from the multidimensional indicators matrix, allows including multiple dimensions in the evaluation process.

The proposed evaluation approach represents a support to regeneration/valorization choices in cities, conscious that the historic urban landscape conservation does not represents a cost, but an investment able to increase the city multidimensional productivity. The evaluation of multidimensional benefits of HUL conservation / regeneration is a central issue in historic cities, consistent with the approach proposed by UNESCO. The attention has mainly been focused on the historic port cities because of their peculiar characteristics (Fusco Girard, 2013).

The proposed evaluation approach takes into account the above highlighted multidimensionality, also including both expert and community knowledge.

However, as highlighted in this thesis, the “intangible and qualitative nature of cross-cutting issues” makes the traditional evaluation approaches not sufficient to capture all the dimensions of the issue.

The present research has aimed at the overcoming of the inherent limitations of traditional evaluations and purely economic ones to explore impacts related to social, cultural and environmental dimensions of the projects, with particular reference to projects related to cultural landscape conservation/regeneration.

The notion of cultural heritage is inseparable from its multidimensional nature (Dalmas et al., 2015), so it requires an “inclusive approach” able to include the dynamic dimension of urban heritage and its multiple values/dimensions.

To date, a shared set of indicators for the assessment of the multidimensional impacts of urban regeneration does not exist.

In this thesis an operational indicators matrix has been proposed for evaluating the multidimensional impacts of conservation/regeneration projects. These indicators are

deduced from best practices in cultural heritage/landscape conservation. In addition to these indicators, others are proposed. They are mainly related to social cohesion category and the measurement of the effectiveness of circular models (see chapter 3).

The indicators represent a system of information able to quantify and synthesize the complexity of the phenomenon. They are able to translate complex concepts into misurable information.

The indicators represent a fundamental tool for evaluate and guide transformation and management projects. The indicators allow decision-makers shaping the objectives of the projects. Coherence among strategies, selected indicators and objectives is necessary. Official data, as ISTAT database, are only a part of available data. There are other data, for example “big data” (Kourtit et al., 2016), that can be very useful to assess dynamic transformation processes. Today we need to assess in a dynamic way; at the moment data are updated at too much wide periodic intervals and hence they are not so relevant.

The choice of indicators addresses actions and strategies; considering an indicator rather than another can influence choices and produce different results.

The set of proposed multidimensional indicators has been deduced from good practices of conservation/regeneration projects to provide guidelines to orient urban regeneration processes and support decision-makers’ choices addressed to the achievement and the increase of cities multidimensional productivity. The proposed indicators matrix can be used both for ex-ante and ex-post assessment.

The set of indicators can represent a general indicator framework that can be used in different territorial situation, but contextualizing it case by case. The choice of key indicators to be considered depends on location and scale of intervention (building, site, etc.). It needs to carefully choose the grid of indicators, choosing the relevant ones (consistency with the objectives of the project) because a high number of indicators should make evaluation process more complex and less effective.

The indicators alone do not allow accounting for the impacts, but they represent a grid able to ensure that the assessment reflects all values and dimensions to be considered. They are a basis of information and, at the same time, allow developing a

common language about impacts and benefits of cultural landscape conservation/regeneration.

The analysis of good practices has aimed at the construction of this multidimensional matrix (chapter 3) able to produce empirical evidence about the "productivity" of HUL conservation/regeneration, that is the multidimensional benefits produced.

The indicators have been classified in 9 categories of impacts that highlight the multidimensionality of the issue. These categories include impacts on different dimensions (chapter 3): from the most analysed (as tourism sector, real estate) to the least examined (as environmental capital, wellbeing).

As emerged from the analysis of the case studies, it is important to underline that indicators can be both objective and subjective, both quantitative and qualitative. This is because the historic urban landscape, being a landscape, can be perceived in different ways from people who live within it.

Objective indicators are based on hard data while subjective indicators are referred to soft data. Subjective indicators are related to community perception of the landscape. Although they are not based on hard data, the subjective indicators can influence choices and have consequence on the economy and productivity of a city. As empirical evidence shows, landscape perceived as a "good landscape" is more attractive for investments and activities localization than a "bad landscape" (Nocca and Fusco Girard, 2017). Both objective and subjective indicators have to be included in the evaluation process for supporting urban regeneration projects.

Indicators, and so the proposed matrix, include both qualitative data (soft), gathered for example through surveys, and quantitative data (hard).

The multidimensional indicators emerged from case studies highlight the complexity of assessment. Quantitative and qualitative approaches are both relevant.

Considering the multidimensionality of the impacts related to conservation and regeneration of Historic Urban Landscape, the economic approach is necessary, but it is not sufficient to capture all the impacts. So, it needs to be integrated with other approaches that consider environmental and social components. The multidimensionality of the emerged issue recalls for the hybridization of methods, able to capture multidimensional impacts.

These impacts need to be considered in relation to all involved stakeholders. The stakeholders' involvement is a fundamental step of the process. It is necessary to identify costs and benefits for all of them, including future generations.

The Ost's table (chapter 5) is referred to the identification of costs and benefits about conservation vs development projects for different stakeholders in developing countries, where the demolition is an actual alternative. In our context, instead, the alternative to the conservation is generally represented by the abandonment and lack of heritage conservation/regeneration.

Cultural heritage is integral part of communities' life and so it is involved in social, economic and environmental processes. It is expression of culture, identity and religious beliefs of societies. But, different groups can have different values and beliefs, with different perceptions about what is relevant for their identity, attributing different values to a heritage place. So to reach a consensus regarding community identitarian values is an important aspect, especially in the context of contemporary multicultural societies.

Cultural heritage expresses and maintains values and traditions of a city and its community, but its significance can be different among communities and also among members of the same community. It links past, present and future but, at the same time, it has the potential for conflicts.

Conflicts and disagreements (in terms of values, interests, beliefs) can represent, if not well managed, the cause of actions that could have negative impacts on heritage values and thus an obstacle in the achievement of heritage outcomes to produce benefits to each involved stakeholder. Differences are inevitable, but they need to be acknowledged and respected in order to mitigate possible conflicts.

Effective cultural heritage conservation can be achieved only through a wide community participation in choices and actions. It is necessary to ensure community participation and facilitate dialogue and open lines of communication and improve relationships.

The recognition of heritage values has not been entrusted to expert knowledge, but it requires a direct involvement of community and different stakeholders, that are those

who hold those values. Local community has a key role and the interaction between local and expert knowledge is a prerequisite for implementing the UNESCO approach.

The case study of Pozzuoli represents a concrete implementation of the proposed methodology, demonstrating its application potentialities.

Indicators deduced from general matrix has been selected and used to evaluate the multidimensional impacts of the ex-Sofer area transformation and thus to support and evaluate territorial development strategies, highlighting in particular the role of cultural landscape in the sustainable urban transformation. The indicators are not only referred to this limited area, but they take into account the impacts on the surrounding, in accordance to the perspective of the Historic Urban Landscape approach.

Considering the multidimensionality of the impacts, multi-group and multi-criteria analysis have been processed to evaluate the more appropriate combination of functions to valorize the area and the resources of the territory.

A combination of a participatory process (interviews and questionnaires) and multi-criteria analysis tools has been used to acquire and process information about the stakeholders' opinions and expert knowledge.

The methods adopted into the present evaluation process allowed also associating performance values, starting from qualitative judgements. As described in the previous chapter, performance levels have been associated to each criterion, taking into account both the expert point of view and the community one.

This decision-making process allows identifying the level of "acceptability" of issues that can help guide policies and actions and reach consensus in favor of a more effective implementation.

The efficiency of this approach lies in the possibility to evaluate simultaneously multidimensional impacts and establish an exchange of information among experts and different involved stakeholders about multidimensional issues. It allows paving a shared ground for future development; including multiple dimensions and visions; generating and producing ideas and innovative solutions (based also on the possibility

offered by the participants); increasing the perception of the acceptability of alternative proposals that can lead to an improvement of the alternatives.

The involvement of all stakeholders and actors has had a fundamental role in decision-making process. It has facilitated the acquisition of information and knowledge that have supported the decision process; on the other hand, it has ensured credibility and transparency in decision making process.

It has been important to identify the level of “acceptability” of objectives and related actions to better orient the strategic choices and to reach consensus. The participatory process, in addition to considering the point of view of different stakeholders, allows generating new alternatives (possible functions).

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ACRONYMS

EAP Economically Active Population

ECoC European Capital of Culture

FTE Full Time Equivalent

GDP Gross Domestic Product

HCO Historic Centre of Oporto

HUL Historic Urban Landscape

ICOMOS International Council on Monuments and Sites

MDGs Millennium Development Goals

MiBACT Ministry of Cultural Heritage and Activities and Tourism

NUA New Urban Agenda

OUV Outstanding Universal Value

PUA Urban Implementation Plan

SAU Agricultural Surface Utilized

SDGs Sustainable Development Goals

UN United Nation

UNESCO United Nations Organization for Education, Science and Culture

VAT Value Added Tax

WHS World Heritage Site

Questi tre anni di dottorato hanno rappresentato una fase della mia vita ricca di esperienze professionali e personali. Durante questo percorso ho incontrato molte persone e ciascuna di loro mi ha dedicato tempo prezioso, trascorso a discutere e a trovare risposte ai miei interrogativi, alle mie idee.
Desidero ringraziare brevemente tutti coloro che hanno condiviso con me questi anni e questo progetto di ricerca e senza i quali non sarebbe stato possibile realizzare il mio lavoro di tesi.

Un ringraziamento speciale al Prof. Luigi Fusco Girard che ha creduto in me sin dal primo giorno di dottorato. La sua passione, il suo amore per la ricerca e la sua professionalità sono stati elementi fondamentali nel mio percorso di dottorato. I suoi consigli e i suoi continui stimoli hanno acceso maggiormente il mio entusiasmo e la mia curiosità scientifica perché, come afferma una citazione famosa, "i migliori maestri sono quelli che ti indicano dove guardare, ma non ti dicono cosa vedere".

Un enorme ringraziamento al Prof. Pasquale De Toro, co-tutor di questa tesi, per essersi dimostrato sempre disponibile a offrirmi il suo preziosissimo contributo teorico e metodologico. Ringrazio per l'impagabile e concreto supporto fornitomi soprattutto durante le ultime fasi del lavoro di tesi. Il suo supporto scientifico e morale è stato fondamentale per il mio percorso di dottorato.

Ringrazio il Prof. Ing. Roberto Gerundo, assessore all'Urbanistica del Comune di Pozzuoli, per la cortesia e la disponibilità che ha dimostrato nei miei confronti, per il tempo dedicatomi durante l'elaborazione del caso studio e per il materiale messo a disposizione.

Ringrazio i Rappresentanti delle istituzioni e delle organizzazioni economico-professionali, i Presidenti delle associazioni di Pozzuoli e i cittadini che hanno reso

possibile l'implementazione del caso studio con il loro tempo dedicatomi e i loro consigli.

Ringrazio lo studio Gnosis Architettura per il materiale messomi a disposizione.

Un particolare e affettuoso ringraziamento ai colleghi e amici di dottorato con cui ho condiviso lezioni, impegni, preoccupazioni e sconforto, oltre a idee e soddisfazioni. Ho condiviso con loro tanti momenti di "allegro esaurimento" e scambiato momenti di confronto particolarmente costruttivi per l'elaborazione del mio progetto di ricerca.

Ringrazio Venantius J. Pinto che ho avuto modo di conoscere durante la mia ricerca e che mi ha permesso l'uso di suoi disegni elaborati per Citiscope (for Habitat III section), mostrando entusiasmo e passione per la mia tesi.

Ringrazio, infine, tutti coloro che mi hanno aiutato nella stesura della tesi con suggerimenti, critiche ed osservazioni: a loro va la mia gratitudine.

Annex A

Case studies

CASE STUDIES

	CITY	COUNTRY
1.	**Bath**	United Kingdom
2.	**Edimburgo**	United Kingdom
3.	**Glasgow**	Scotland
4.	**Guimares**	Portugal
5.	**Huntsville**	Alabama, United States
6.	**Istanbul**	Turkey
7.	**Kazimierz/Kracow**	Poland
8.	**Kosice**	Slovakia
9.	**Lille**	France
10.	**Linz**	Austria
11.	**Liverpool**	United Kingdom
12.	**Luxembourg**	Luxembourg
13.	**Maribor**	Slovenia
14.	**Marrakesh**	Morocco
15.	**Marseille**	France
16.	**Mons**	Belgium
17.	**Newcastle**	United Kingdom
18.	**Oaxaca de Juarez**	Mexico
19.	**Oporto**	Portugal
20.	**Ottawa**	Canada
21.	**Pecs**	Hungary
22.	**Perth**	Australia
23.	**Philadelphia**	Pennsylvania, United States
24.	**Pilsen**	Czech Republic
25.	**Plymouth**	England
26.	**Quito**	Ecuador
27.	**Riga**	Lettonia
28.	**Ruhr**	Germany
29.	**Salford/Manchester**	England
30.	**Salvador de Bahia**	Brazil
31.	**Sibiu**	Romania
32.	**Skopje**	Macedonia
33.	**Stavanger**	Norway
34.	**Tallin**	Estonia
35.	**Tiblisi**	Georgia
36.	**Turku**	Finland

37.	**Umea**	Sweden
38.	**Valparaiso**	Chile
39.	**Verona**	Italy
40.	**Vilnius**	Lithuania

BATH, United Kingdom

City	Bath, United Kingdom
N. of inhabitants	88 859 (2011)
UNESCO sites	Yes
European Capital of Culture	-
Year of the project	-

COSTS

COST OF WHS NOMINATION	
WHS co-ordinator: salary over 4.8 years	£200,000
Other staff time, including consultation	£41,000
Document production	£50,000
Additional studies that are required	£80,000
Management Plan	£50,000
Staff time assisting Management Plan	£41,000
Total	**£462,000**
Annual direct costs of managing	**£215,000**
Annual costs in support of the WHS status	**£10,000**
Annual costs associated with the participation of partners and advisors to monitor the progress of the management plan	**£34,000**

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation

Total value of tourism (2007)	**Bath**	**Bath + North East Somerset**	
	£195 million	£349million	
Total number of visitors to Bath	**2008**	**2010**	
	4,493,000	4,655,000	
N. of day visitors in 2008 (of the total)	**2008**	**2010**	
	3,608,000	3,682,000	
N. of international visitors to historic cities		**2002**	**2008**
	Bath	200,000	254,000
	Oxford	390,000	437,000
	York	230,000	249,000
N. of visitors staying overnight coming from overseas in 2008	254,000		
N. of visitors staying overnight coming from UK in 2008	631,000		
Visitors staying overnight spend	£89.89 per person per night		
A day visitor spend	£28.04		

Average spend per visitor (excluding accommodation)	**2000**		**2008**		**2014**		
	£37.00		£47.97		£57.81		
N. of paying visits to cultural and natural attractions	850,000						
Visitor expenditure		**2001**	**2004**	**2006**	**2008**	**2010**	**2014**
	All accomodation (stayng visitors only)	£27.93	£26.77	£23.62	£23.62	£34.79	£44.66
	Shopping	£11.09	£16.16	£14.81	£14.81	£10.72	£26.65
	Eating out	£9.34	£13.40	£14.45	£14.45	£13.30	£20.62
	Entertein ment	£3.90	£5.93	£7.92	£7.92	£4.96	£7.55
	Travel	£1.56	£2.44	£2.39	£2.39	£1.60	£2.99
N. of accommodation	424						
N. of beds in hotel	9,000						
Average length of stay	**2008**		**2010**				
	2.47 nights		3.47				
Average length of a day trip	5 hours 21 minutes						
Percentage of visitors on a day trip	44%						
Percentage of visitors on repeat visit to the city	58%						
Percentage of overnight visitors	55%						
Percentage of overnight visitors using serviced accommodation (hotel, B&B etc.).	83%						
Percentage of visitors arrived by car, motorcycle etc.	54%						
Average occupancy room in 2010	77%						
Creative, cultural and innovative activities							
No data available							
Typical local productions							
No data available							
Environment and Natural Capital							
No data available							
Community and Social Cohesion							
No data available							
Real estate							
Average properties price	**2006**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
	$271,000	$320,000	$376,250	$335,000	$300,000	$358,000	$370,000
Financial return							
No data available							
Welfare/wellbeing							
N. of jobs related to tourism spend (direct and indirect) - 2010	8,345						

N. of jobs directly related to tourist spend in 2007	7,834
Cultural value of properties/landscape	
No data available	

Edinburgh, United Kingdom

City	Edinburgh, United Kingdom
N. of inhabitants	495.360 (2011)
UNESCO sites	Yes
European Capital of Culture	-
Year of the project	2000

COSTS

Conservation Funding Awarded from 2000 to 2008 (million US$)	18.55
Founds awarded by Historic Scotland (million US$)	45.55
Edinburgh Capital Streets Programme from 2003 to 2008 (million US$)	28.30
City of Edinburgh Council (Road tolls and transport infrastructure investment) from 2005 to 2008 (million US$)	768.33

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation

N. of tourists per year	**National**	**Foreign**	**Total**
	3.2 million	0.8 million	4 million
Total income generated by the tourism			US$1.56 billion

Average daily expenditure per person (£) (excl. ticket expenditure)		**2010**	**2015**
	Local	13.8	17.3
	Day visitors (from elsewhere in Scotland)	28.1	34.2
	Day visitors (from outside Scotland)	38.5	28.7
	Staying visitors (from elsewhere in Scotland)	80.7	102.8
	Staying visitors (from outside Scotland)	104.7	103.7

N. of touristic properties (2010)	510
Percentage of tourism properties in WHS (2010) on total properties	3%

Creative, cultural and innovative activities

N. of visitors attracted by festivals per year	**2008**	**2015**
	3.3 million	4.5 million
Economic impact generated by festivals per year		US$257.4 million
N. of tickets sold for Fringe Festival	**2008**	**2009**
	1.4 million	1.8 million
N. of people considering the Festival as most		71%

important reason for visiting Scotland			
Typical local productions			
No data available			
Environment and Natural Capital			
No data available			
Community and Social Cohesion			
Percentage of local festival goers considering that festivals increase their pride in Edinburgh as a city			89%
N. of people thinking that Festivals give them the opportunity to spend more quality time with family and friends			75%
N. of public spaces properties in WHS (2010)			34
Real estate			
N. of social housing units	**2001**		**2010**
	925		724
Percentage of social housing on the total housing in the EWHS			5.2%
Residential properties in WHS (2010)	**Number**	**Percentage on total properties**	
	11,348		63%
Commercial uses properties in WHS (2010)	**Number**	**Percentage on total properties**	
	5,200		29%
Sports, recreation, and entertainment properties in WHS (2010)	**Number**	**Percentage on total properties**	
	131		1%
Vacant properties in WHS (2010)	**Number**	**Percentage on total properties**	
	0	-	
Percentage of office demand for space in the city center			70%
Sqm of planning permission for office in city center	**2003**	**2005**	**2008**
	193,768	131,068	109,679
Financial return			
No data available			
Welfare/wellbeing			
N. of people working in the EWHS on a daily basis			78,000
Percentage of people working in public sector			17%
Percentage of people working in the third sector on the total jobs	**Financial and banking sector**	**Tourism and entertainment**	**Total**
	45%	26%	71%
Full time equivalent jobs created in Edinburgh during 2015 (primarily within the tourism sector by festivals)			5660
Cultural value of properties/landscape			

Percentage of the classified buildings in the EWHS in good condition	97%
Percentage of the classified buildings in the EWHS having minor problems	1.5%
Percentage of the classified buildings in the EWHS having major problems	1%
Percentage of the classified buildings in the EWHS considered ruins	0.5%
N. of applications for rehabilitation of heritage building per year (2001-2007)	700

Guimaraes, Portugal

City	Guimares, Portugal
N. of inhabitants	158.124 (2011)
UNESCO sites	Yes
European Capital of Culture	2012
Year of the project	-

COSTS	
Infrastructure projects	€70m
Developing, managing and implementing the cultural programme	€41m
Overall budget for ECoC	**€111m**

MULTIDIMENSIONAL IMPACTS		
Tourism and Recreation		
	2011	**2012**
N. of visitors	58,664	121,435
N. of domestic tourist visits	42,169	70,000
N. of foreign nationals tourist visits	12,594	50,000
N. of foreign visitors to tourist information offices (Over half, 56%, of foreign visitors came from the EU)	**2011**	**2012**
	42,384	70,509
N. of Portuguese visitors to tourist information offices	**2011**	**2012**
	12,819	50,926
Increase in international visitors to tourist information centres		60%
Increase in average room occupancy rates		27%
Press trips organised (2013)		110
Average room occupancy rate		64.4%
Total hotel revenue	**2011**	**2012**
	€8.8m	€11.1m
Increase in accommodation capacity		154%
Increase in opening-hour licences issued for commercial establishments and services		21%
Increase in licences for food and beverages		6%
Creative, cultural and innovative activities		
Visitors in the opening event (European Capital of Culture) (2012)		150,000
N. of events included in the cultural programme		2,000
N. of artists of professionals involved in events of cultural programme		25,000
Attendance at ECoC events		2 million

N. of residents attending or participating in events (including young, disadvantaged or "culturally inactive" people)	15,000
Percentage of pupils participated in ECoC cultural projects	12.7%
Value of ECoC cultural programmes	€41.7m
N. artistic residencies	700
N. of new publications (cultural programme)	60
N. of films produced (cultural programme)	40
Advertising value (2013)	€40,355,000
Typical local productions	
No data available	
Environment and Natural Capital	
No data available	
Community and Social Cohesion	
N. volunteers contributed to the programme during the summer 2012	around 300
N. organisations involved	300
Real estate	
No data available	
Financial return	
No data available	
Welfare/wellbeing	
No data available	
Cultural value of properties/landscape	
No data available	

HUNTSVILLE, Alabama, United States

City	Huntsville, Alabama, United States
N. of inhabitants	186.254 (2013)
UNESCO sites	No
European Capital of Culture	-
Year of the project	-

COSTS

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation			
N. of annual travellers			623,000
Creative, cultural and innovative activities			
Direct revenue generated by arts & culture companies and organizations			$5.1m
Sales revenue for arts and culture businesses and organizations	**2001**		**2011**
	$3,454,246		$5,124,000
Typical local productions			
No data available			
Environment and Natural Capital			
No data available			
Community and Social Cohesion			
No data available			
Real estate			
No data available			
Public financial return			
No data available			
Welfare/wellbeing			
N. of arts and cultural occupations (2006)			235
N. of employers by industry		**2001**	**2011**
	Agriculture, forestry & mining	29	16
	Manufacturing	111	144
	Wholesale, retail & restaurants	51	67
	Education, health & social services	44	51

	Construction	247	293
	Transport, communications & utilities	332	518
	Services	104	161
	Public administration	7	13
Share of employment by industry		**2001**	**2011**
	Agriculture, forestry & mining		
	Manufacturing	5%	7%
	Wholesale, retail & restaurants	22%	9%
	Education, health & social services	4%	4%
	Construction	23%	25%
	Transport, communications & utilities	26%	27%
	Services	17%	23%
	Public administration	2%	3%
Cultural value of properties/landscape			
No data available			

ISTANBUL, Turkey

City	Istanbul, Turkey
N. of inhabitants	14,8 milioni (2016)
UNESCO sites	Yes
European Capital of Culture	2010
Year of the project	-

COSTS	
Actual expenditure	**Euro (m)**
Ministry of Finance	274.34
Istanbul Provincial Administration	0.69
Istanbul Metropolitan Municipality	0.18
Istanbul Chamber of Commerce	0.50
Istanbul Chamber of Industry	0.03
Donations and Sponsorship	1.13
Sales and other revenue	0.20
Interest and other income	9.96
EU (Melina Mercouri Prize)	1.50
Total	**288.65**
Actual expenditure	**193.95**

MULTIDIMENSIONAL IMPACTS	
Tourism and Recreation	
N. of project in Tourism Promotion	33
Percentage in increase in tourist visits	11%
Creative, cultural and innovative activities	
N. of projects in Visual Arts	49
N. of projects in Music and Opera	43
N. of projects in Urban Culture	42
N. of projects in Literature	26
N. of projects in Promotion and Marketing	1
N. of projects in Theatre and Performing Arts	25
N. of projects in Cinema Documentary Animation	40
N. of projects in Education	10
N. of cultural events	10,000
N. of concerts included in ECoC cultural programmes	1598
N. of theatre performances included in ECoC cultural programmes	1127

N. of conferences or seminars included in ECoC cultural programmes	1201
N. of workshops included in ECoC cultural programmes	735
N. of exhibitions included in ECoC cultural programmes	763
N. of publications included in ECoC cultural programmes	336
N. of literary readings included in ECoC cultural programmes	350
N. of festivals included in ECoC cultural programmes	52
N. of film screenings included in ECoC cultural programmes	500
Value of ECoC cultural programmes	€194m
N. of projects in Urban Culture	42
N. of projects in Cultural Heritage and Museums	30
N. people attended or participated in events/activities	10m
Typical local productions	
N. of projects in Traditional Arts	20
Environment and Natural Capital	
No data available	
Community and Social Cohesion	
N. of volunteers	901
Real estate	
No data available	
Financial return	
No data available	
Welfare/wellbeing	
No data available	
Cultural value of properties/landscape	
N. of sites restored, maintained or renovated	130

KAZIMIERZ, Krakow, Poland

City	Kazimierz, Kracow, Poland
N. of inhabitants	Krakow 759.131 (2012)
UNESCO sites	Yes
European Capital of Culture	-
Year of the project	-

COSTS

-

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation			
Average growth of touristic sector	22%		
Increase rate of touristic units and rooms in hotel	30%		
N. of visitors	**1980**	**2003**	
	40.000	100.000	
N. of catering services	**2003**	**2004**	
	17	22	
N. of tourist accommodation and services	**1994**	**2003**	**2005**
	39	117	133
N. of hotels	**2003**	**2004**	
	17	22	
N. people in hotels (2003)	**Kracovia**	**Kazimierz**	
	1.696.928	60.750	
Creative, cultural and innovative activities			
N. of cultural events	**1988**	**2004**	
	58	160	
N. of visitors to cultural places	**1988**	**2004**	
	40,000	100,000	
Percentage of cultural events	114 %		
Typical local productions			
Percentage of crafts, small scale manufacture, production activities	**1994**	**2003**	
	8,8 %	11,7 %	
Environment and Natural Capital			
No data available			
Community and Social Cohesion			
No data available			

Real estate			
Percentage of new buildings			21,6 %
Percentage of building expansion			31,4 %
Average price of apartments	**2003**		**2005**
	2821 PLN per sqm		4438 PLN per sqm
M. of building permits	**1997-1999**		**2003-2005**
	51		105
Percentage of properties owned by the state	**1994**		**2003**
	62%		22%
Percentage of privately owned properties	**1994**		**2003**
	27%		31%
Percentage of properties owned by the roman catholic Church	**1994**		**2003**
	9%		14%
Financial return			
No data available			
Welfare/wellbeing			
Evolution of the population	**1988**		**1998**
	17,800		16,589
Number of individuals receiving public social care	**Prolonged illness**		19,2 %
	Unemployment		12,1 %
	Poverty		12,4 %
Average number of jobs in hotels	**2002**	**2006**	**2010**
	64, 1%	66,2%	60, 8%
Cultural value of properties/heritage			
Re-functionalization of the historic buildings			47 %

KOSICE, Slovakia

City	Kosice, Slovakia
N. of inhabitants	240.426 (2012)
UNESCO site	Yes
European Capital of Culture	2013
Year of the project	-

COSTS

Budget at application phase	€ 31.5 m
Actual expenditure (2007-2013)	€ 23.4m

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation		
Total number of visitors staying in accommodation facilities	**2012**	**2013**
	129,828	151,512
N. of foreign visitors	**2012**	**2013**
	56,196	67,141
Stays overnight	**2012**	**2013**
	258,530	285,496
Overnight visitor spend on accommodation (euro)	**2012**	**2013**
	7,337,574	10,111,926
Hotel occupancy during the 3-day opening ceremony		98%
Creative, cultural and innovative activities		
N of visits during the 3-day opening ceremony		100,000
Total number of ECoC projects and events (80% co-produced or branded as part of ECOC) – between 2009 and 2013		More than 600
N. of ECoC events (2013)		3,000
N. of participants in local events and workshops at SPOTs centres		9,000
N. of people involved in organising events at SPOTs centres (including 25 core local organisers)		100
N. of participation to Nuit Blanche festival	**2009**	**2013**
	13,000	50,000
N. of participants to the Mazal Tov festival (2013)		15,000 people
N. of visits Kunsthalle project	**July 2013**	**August 2013**
	5,000	6,200
Typical local productions		
No data available		

Environment and Natural Capital	
No data available	
Community and Social Cohesion	
N. of volunteers engaged by Košice Tourism	60
Real estate	
No data available	
financial return	
No data available	
Welfare/wellbeing	
No data available	
Cultural value of properties/landscape	
No data available	

LILLE, France

City	Lille, France
N. of inhabitants	227.560 (2010)
UNESCO sites	Yes
European Capital of Culture	2004
Year of the project	-

COSTS

La Ville de Lille	8.00 €m
Lille Métropole Communauté Urbaine	13.70 €m
Le Conseil Régional du Nord– Pas de Calais	10.70 €m
Le Conseil Général du Nord	6.70 €m
Le Conseil Général du Pas-de-Calais	3.35 €m
L'Etat et ses différents Ministères	13.70 €m
Union Européenne, villes et collectivités de l'Eurorégion	4.50 €m
Private businesses	13.00 €m
Total	**73,65 €m**

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation		
Percentage of increase in number of overnight hotel stays from 2003 to 2004		27,2 %
Average length of stay (days)	**2004**	50 % in hotel
		24% in house family
Average price of double rooms	**2003**	**2004**
	300,00 €	400,00 €
Overall hotel occupancy	**2003**	**2004**
	63%	70.3%
Percentage of international tourists		50%
Percentage of increase of restaurants tournover from 2003 to 2004		Between 7-13%
Creative, cultural and innovative activities		
Percentage of visitors for cultural reason		58%
Percentage of visitors stay for cultural temporary events		46%
N. of adult visitors for cultural reason (2004)		100,000
Percentage of visitors only for European Capital of Culture		27%
N. of cultural events		2,500
N. of participants in cultural events		9 million
N. of artists taking part in cultural activities		17,000

N. of schoolchildren taking part in the cultural events		66,000
Typical local productions		
No data available		
Environment and Natural Capital		
No data available		
Community and Social Cohesion		
N. of volunteers		17,800
Real estate		
No data available		
Financial return		
No data available		
Welfare/wellbeing		
N. of new jobs in touristic sector	**2012**	**2030**
	2,840	5,130
Average number of jobs in hotels (2004)		24,6%
Average number of jobs in stores	**2003**	**2004**
	63%	70,3%
Cultural value of properties/landscape		
No data available		

LINZ, Austria

City	Linz, Austria
N. of inhabitants	191.501 (2013)
UNESCO sites	Yes
European Capital of Culture	2009
Year of the project	-

COSTS

Actual funding of Linz 2005-10	**Euro (m)**
Bund	20.0
Land of Upper Austria	20.0
City of Linz	20.0
Sponsorship	4.0
European Union	1.5
Ticket sales	1.1
Project funding	0.9
Merchandise	0.5
Other	0.4
Sale of rights, assets, etc.	0.2
Total	**68.7**
Actual expenditure of Linz 2005-10	**68.7**

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation		
N. visitors	**2006-2008**	**2009**
	600,000	2,895,000
Increase in stays		10%
Increase of domestic visitors		20%
Additional investment for new hotels		€67m
Additional investment for improved or extended hotels		€6.5m
Creative, cultural and innovative activities		
N. of investment in cultural events		€42.4m
N. of projects in ECOC cultural programmes		200
N. of events in ECOC cultural programmes		7,700
N. of artists in ECOC cultural programmes		5,000
N. of audiences in ECOC cultural programmes		3.5m
N. of visitors in events of ECOC cultural programmes	Höhenrausch (Exhibition)	272 860
	Pflasterspektakel inkl. "Das unbeschriebene Blatt" (Festival)	210 000

	80+1 Eine Weltreise (Project)	170 000
	Eröffnung09 (Festival)	130 000
	Klangwolke (Festival)	105 000
	daily organ concerts in churches	13,000
N. of teachers in the Project "I like to move it, move it"		700
N. of pupils in the Project "I like to move it, move it"		2000
N. of artist in the Project "I like to move it, move it"		90
Typical local productions		
No data available		
Environment and Natural Capital		
No data available		
Community and Social Cohesion		
N. of volunteers		1200
Real estate		
No data available		
Financial return		
Additional regional GDP		€426m
Increases in additional regional GDP for tourist economy	**2008**	**2009**
	€3.5m	€7.2m
Increases in additional regional income for tourist economy	**2008**	**2009**
	€2.5m	€5.1m
Increases in additional regional GDP for new hotels	**2008**	**2009**
	€64m	€78m
Increases in additional regional income improving hotels	**2008**	**2009**
	€45m	€55m
Increases in additional regional GDP for purely cultural projects		€8.4m
Welfare/wellbeing		
N. jobs created		4,625
N. of additional jobs for tourist economy	**2008**	**2009**
	39	78
Increases additional jobs for new or improving hotels	**2008**	**2009**
	664	806
N. jobs created for purely cultural projects		93
Cultural value of properties/landscape		
No data available		

LIVERPOOL, United Kingdom

City	Liverpool, United Kingdom
N. of inhabitants	465.700 (2011)
UNESCO sites	Yes
European Capital of Culture	2008
Year of the project	-

COSTS

Total expenditure of European Capital of Culture funding between 2003/04 and 2008/09	**£129,887**

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation				
N. of visits to Liverpool	**2004**	**2007**	**2008**	
	19.0 million	18.28 million	27.7 million	
N. of additional visits to the city attracted from Liverpool European Capital of Culture (2008)	9.7 million			
N. of visitor nights in Liverpool generated by ECoC in 2008 (in general, not only in hotels)	2.16m			
N. of visitor nights in Liverpool hotels generated by ECoC	**2004**	**2005**	**2008**	
	1.40m	1.51 million	1.91m	
Average visitor spend per day	**2006**	**2008**		
	£35	£47		
Total visitor spend in Liverpool	**2002**	**2003**	**2004**	**2008**
	£563m	£612.07	£629m	£617m
£ generated from visits across Liverpool, Merseyside and the broader North West region (2008)	£753.8 million			
N. of new hotel rooms in 2008	Over 600			
Average room rate	**2001**	**2003**	**2007**	**2008**
	£56.8	£54	£68.4	£72
Percentage of occupancy of hotels at weekends	**2007**	**2008**		
	84%	86%		
Percentage of occupancy of hotels overall	**2007**	**2008**		
	71%	76%		
Percentage of increase in passengers by train from London to Liverpool (from 2007 to 2008)	6.2%			
Number of flights into and out of Liverpool John Lennon Airport	**2007**	**2008**		
	5.5m	5.4m		
Creative, cultural and innovative activities				
Total audience among the largest arts and cultural organisations in the city	**2006**	**By 2008**		
	5.04 million	5.6 million		

N. of events, performance days, exhibition days and training and educational workshops		**2005-06**					**2008**
		5,256					7,000
N. of creative industry enterprise in Liverpool		**2004**					**2008**
		1,548					1,683
N. of events in 2008 listed in the official Liverpool 08 Yearbook							276
N. of events in 2008 listed on the Liverpool 08 website		**2006**		**2007**			**2008**
		77		315			830
N. of activities (including not only full events, but also total performance days, exhibition days, training and educational workshops, etc.)		**2005-2008**					**2008**
		7,000					41,000
N. of activities directly delivered by, procured by or arose from large grants from Liverpool Culture Company							Up to 15,000
N. of performance and exhibition days (over years 2005-2008)							21,000
N. of workshops and training sessions (over years 2005-2008)							20,000
N. of creative and digital firms							7,000
N. of new start-ups 2008							42
Percentage of visits to the city attracted from Liverpool European Capital of Culture							35%
Percentage of increase of visitors between 2007 and 2008							34%
Increase in arts audiences 2006-2008							10%
Staying visitor nights		**In hotel**		**other accommodation**			**total**
		114		102			2.16m
Typical local productions							
No data available							
Environment and Natural Capital							
No data available							
Community and Social Cohesion							
N. of volunteers (7,000 days)							1,000
Real estate							
Average house prices		**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
	Detached	143,073	137,963	183,573	227,928	241,418	255,227
	Terraced	38,137	38,461	43,417	60,530	77,610	89,841
Percentage of increasing of property prices within the first year of the European Capital of Culture announcement							by 10%
Financial return							
Financial return on all available rooms (per room)		**2007**					**2008**
		£49					£56
GVA (gross value added) of Visitor Economy							£3.8bn

GVA in the creativity and digital sectors in Liverpool City Region	**In 2013**		**By 2013**
	£740 million		£878 million
GVA to the local economy by creative and digital firms (2013)	£1.4 billion		
Welfare/wellbeing			
N. of jobs supported by visitor economy	**2005**	**2008**	**2014**
	17,317	23,000	49,000
N. of employers in tourism economy (2009)	**Restaurant and food service**		7,200
	Beverage service		4,900
	Hotels and accommodation		2,500
	Total		20,600
N. of jobs supported by the creativity and digital sectors in Liverpool City Region	18,906		
N. of employees in creative industries enterprise in 2008	**2003**	**2004**	**2008**
	6,220	6,233	10,987
Average number of full-time artists' jobs for a period of four years (2008)	140		
N. of people employing in creative and digital firms	over 48,000		
Cultural value of properties/landscape			
No data available			

Maribor, Slovenia

City	Maribor, Slovenia
N. of inhabitants	94.318 (2012)
UNESCO sites	
European Capital of Culture	2012
Year of the project	-

COSTS	
Funding for Cultural Programme 2010-2012	
National contribution	€ 15,212,864
Municipal contributions	11,281,880
European Union	€ 838,00069
Other public bodies	€ 79,413
Other revenue (sponsorship, sales, donations)	€ 987,485
Total	**28,399,642**
Programme expenditure	**28,398,514**

MULTIDIMENSIONAL IMPACTS	
Tourism and Recreation	
N. of tourist visits (Maribor with five partner cities)	233,564
Increase in n. of tourist visits respect to 2011 (Maribor with five partner cities)	13%
Overnight stays tourists (Maribor with five partner cities)	541,699
Increase in overnight stays tourists in respect to 2011 (Maribor with five partner cities)	12%
Visits by national and foreign journalists	400
N. of additional foreign tourists in 2012	900,000
N. of additional of overnight stays in 2012	700,000
Creative, cultural and innovative activities	
N. of projects of ECoC cultural programmes	405
N. of events of ECoC cultural programmes	5,624
N. of audience of events of ECoC cultural programmes (2010-2012)	4.5m
N. of visitors to the web site	2.8m
N. of visitors of cultural events	3,800,000
Estimated net benefits from marketing	€ 1,000,000
Proportion of artists from abroad and from the host country featuring in the cultural programme	319 co-producers

Cultural Embassies involved			80
N. of visitors to Lent Festival			700,000
N. of visitors to Festival of the Arts and Heritage			100,00
N. of visitors to Europe in the Museum / a Museum in Europe			24,746
N. of visitors to Art Stays 2012 / 10th International Festival of Contemporary Art			17,000
N. of visitors to Club 2012			16,581
N. of visitors to Staging Post			15,230
N. of visitors to Germans and Maribor Exhibition			14,474
N. of visitors to Pika Festival			14,060
N. of visitors to Rock Otočec			13,500
N. of visitors to Stage between Heaven and Earth			9,035
N. of cultural events in Maribor and partner cities	**2010**	**2011**	**2012**
	800	1,100	5,900
Typical local productions			
No data available			
Environment and Natural Capital			
No data available			
Community and Social Cohesion			
Number of active volunteers			87
N. of organisations from Maribor and partner cities			35
Schools and educational institutions took part in programme activities			some 300
N. of European cross-border co-operations within ECoC cultural			128
Real estate			
No data available			
Financial return			
No data available			
Welfare/wellbeing			
N. of new job positions			600
Percentage of digital literacy and accessibility to the WWW			95%
Cultural value of properties/landscape			
No data available			

MARRAKESH, Morocco

City	Marrakesh, Morocco
N. of inhabitants	928.850 (2014)
UNESCO sites	Yes
European Capital of Culture	-
Year of the project	-

COSTS

	-

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation

N. of classified hotels	**1992**			**2006**
	73			572
N. of maisons d'hotes	**2005**			**2007**
	277			700
N. of beds	**1992**			**2006**
	16,277			35,068
N. of hotel nights (2000)	4,242,622			
N. of airline passengers		**Domestic Passengers**	**International Passengers**	**All passengers**
	1995	157,697	497,749	675,548
	2001	308,201	1,063,487	1,393,363
	2002	286,145	1,038,075	1,349,363
	2003	246,858	1,066,814	1,368,281
	2004	273,339	1,345,460	1,667,267
	2005	305,030	1,847,628	2,195,899
	2006	272,495	2,324,348	2,648,742
N. of airlines operate at the M. airport	Over 32			
N. of boutique hotel	**1992**			**2002**
	1			700

Creative, cultural and innovative activities

N. of visitors to Riad Art Expo	**2011**	**2012**
	5,000	10,000

Typical local productions

N. of artisan units (2004)	5,850

Environment and Natural Capital

No data available	

Community and Social Cohesion			
N. of new cooperatives			39
N. of Artisans Registered in the Crafts Association			5,847
Real estate			
Percentage of ownership homes	**1994**		**2004**
	49%		51%
Percentage of rental homes	**1994**		**2004**
	37%		37%
Financial return			
No data available			
Welfare/wellbeing			
School attendance rate stood from 2004	**Medina**	**Marrakesh Menara**	**Syba**
	79.68%	85.39%	75.35
Illiterancy rate	**1994**		**By 2004**
	42.45%		33.3%
Poverty rate	**Medina**		**Mechouar Kasbah**
	9.19%		7.69%
N. enrolled students in the new University of Marrakesh			25,000
Percentage of business units in Medina on total business units in Marrakesh			42% (on 30,000)
Percentage of employees in Medina on total employees in Marrakesh			31% (on 90,9000)
Cultural value of properties/landscape			
No data available			

MARSEILLE, France

City	Marseille, France
N. of inhabitants	850.726 (2010)
UNESCO sites	Yes
European Capital of Culture	2013
Year of the project	-

COSTS

Financing sources	**€m**
State (+EU in application)	14.7
Région Provence-Alpes-Côte d'Azur	12.3
Conseil général des Bouches-du-Rhône	12.3
Marseille Provence Métropole (MPM) Ville de Marseille (+MPM in application)	22.1
Pays d'Aix / Ville d'Aix en Provence	7.4
Toulon Provence Méditerranée / Ville de Toulon	7.4
Other local authorities and municipalities	7.4
Business partners / Sponsorship and communication	14.7
Total	**€98m**
Actual expenditure	**98 973**

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation		
N. of national tourists per year	**Prior to 2013**	**2013**
	8m	8.8m
Percentage of increase in international tourists (compared to 2012)		17%
Percentage of increase in total hotel nights spent (compared to 2012)		9%
Percentage of increase in total hotel nights spent by foreign tourists (compared to 2012)		23%
N. of cruise passengers arriving at the Port of Marseille in 2013		1.1m
Percentage of increase in number of cruise passengers		22%
Creative, cultural and innovative activities		
€ value of ECoC cultural programme during 2013		€38m
N. of ECoC cultural projects		950
N. of visitors in the opening weekend (12-13 January 2013)		600,000
N. of visitors at free open-air events		1.7 million
N. of visitors in exhibition "Mediterraneans: From Yesterday's Cities to Today's Men"		112,000

N. of artists in exhibition “Here, Elsewhere”		40
N. of visitors in exhibition “Here, Elsewhere”		40,000
N. of visitors in exhibition “Rodin, the Light of Antiquity”		139,000
N. of visitors in the re-opening Musée des arts décoratifs (Château Borély)		50,000
N. of visitors in the re-opening Musée d’histoire et du port antique (centre Bourse)		80,000
N. of visitors in exhibition “Le Corbusier and Brutalism”		70,000
N. of school pupils in specific events for young people		236,000
N. of visitors in exhibition “Entre Flammes et Flots”		420,000
N. of visitors in exhibition “TransHumance”		330,000
N. of visitors in Grand Atelier du Midi		462,000
N. of visitors in Friche Belle de Mai		486,000
N. of visitors to the church of Notre Dame de la Garde in Marseille	**2012**	**2013**
	1.5m	2m
N. of visits to the main venues during 2013		11m
Typical local productions		
No data available		
Environment and Natural Capital		
No data available		
Community and Social Cohesion		
N. of volunteers hosted by the Association Marseille-Provence via the EU’s Youth in Action programme		15
Percentage of residents attended at least one event		74%
Percentage of residents attended more than one event		83%
Real estate		
No data available		
Financial return		
Receipts from the tourism tax (“la taxe de séjour”) in 2013		€2,612,501
Percentage of increase in receipts from the tourism tax (“la taxe de séjour”) compared to 2012		25.2%
Welfare/wellbeing		
number of staff members employed on permanent contracts (2013)		73
number of staff members employed on fixed-term contracts for the opening in January 2013		216

number of staff members employed on fixed-term contracts for for TransHumance in May 2013	141
No data available	

MONS, Belgium

City	Mons, Belgium
N. of inhabitants	92.008
UNESCO sites	Yes
European Capital of Culture	2015
Year of the project	-

COSTS

Final budget proposed	€78m
Expenditure by Mons2015 (2006-2015)	About €73m

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation			
N. of tourist visits			250,000
N. of visits to the tourist office	**2011**	**2014**	**2015**
	70,000	50,000	157,000
Additional expenditure by all tourists (compared to the baseline situation)			€75m
Creative, cultural and innovative activities			
N. of new performing arts works			33
N. of projects of ECoC cultural programme			219
N. of events of ECoC cultural programme			2,390
N. of total attracted audiences (n. of people)			2.2m
N. of local resident participating (as choir) to La Grande Clameur			500
Audience for La Grande Clameur (n. of people)			5,000
N. of children involved in for the concert “El Sistemons”			150
Audience for the concert “El Sistemons” (n. of people)			1,800
N. of projects featured from Café Europa (cultural collaboration and a promotional tool)			More than 100
N. of visitors to Café Europa each month			1,500
N. of visitors to Café Europa during the title year			15,000
N. of different artistic activities featured from the Ailleurs en Folie			150
N. of different artists featured from the Ailleurs en Folie			297
Total audience for the Ailleurs en Folie (n. of people)			27,250 (equivalent to 462 per day)
N. of events at “la Guinguette littéraire” over five months			42
Audience for “Van Gogh in the Borinage: the birth of an artist” exhibition (n. of people)			180,000
N. of visitors to Opening ceremony			100,000

N. of visitors within Le Grand Huit and Le Grand Ouest	80,000
N. of visitors to Metamorphosis weekend (opening of new museums)	50,000
Audience for La Ville en Jeu(x) Festival (n. of people)	50,000
N. of visitors to Musée du Doudou	44,000
Audience for (n. of people)	
N. of visitors to Belfry	38,000
N. of visitors to Sun city (sunflower maze)	35,000
N. of visitors to Le Grand Ouest	29,000
N. of visitors to La Chine Ardente	27,000
N. of visitors to Mons Memorial Museum	22,500
N. of visitors to La Guinguette littéraire	22,000
N. of visitors to Maison Van Gogh	21,000
N. of visitors to Le Jardin suspendu	20,000
N. of visitors to Café Europa	15,000
N. of young people involved in various elements of the cultural programme	1,500
N. of teachers involved in various elements of the cultural programme	1,000
N. of workshops held for young people	500
N. of participants in workshops	9,700
Typical local productions	
No data available	
Environment and Natural Capital	
No data available	
Community and Social Cohesion	
N. of non-profit associations	500
N. of volunteers	7,500
Real estate	
No data available	
Financial return	
Return to the Belgian economy for every €1 invested by the regional authorities in the Mons 2015 Foundation	€5.5
Welfare/wellbeing	
Percentage of residents felt that the ECoC had been a positive thing	86%
Cultural value of properties/landscape	
No data available	

Newcastle, United Kingdom

City	Newcastle, United Kingdom
N. of inhabitants	279100
UNESCO site	Yes
European Capital of Culture	No
Year of the project	-

COSTS

Public sector investment	£40m
Private sector investment	£145m

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation			
N. of new hotels			12
N. of additional hotel bedrooms			1,505
Financial value of visitor and hospitality sector (to Newcastle/Gateshead economy – 2007)			£1.2 billion
Creative, cultural and innovative activities			
N. of new business start ups			5080
Typical local productions			
No data available			
Environment and Natural Capital			
No data available			
Community and Social Cohesion			
Residential population	**2003**	**2009**	
	998	1455	
Real estate			
	Lifetime Target	**March 2003**	**March 2006**
New/improved commercial floorspace (sqm)	74,000	80,900	112,882
New homes (residential units)	522	289	517
Buildings brought back into use	70	121	131

Retail rental values: rent £/sq ft ITZA (£/m2 ITZA in brackets)				
		1997	**2003**	**2009**
	Grainger St, north of Market St	100 (1076)	160 (1722)	150-165 (1615-1774)
	Clayton St	30 (323)	40 (430)	30-50 (323-538)

Office rental values	**Refurbished offices, Grey St**	10.50 (113)	17.50 (188)	17.50 (188)
	Modern offices, edge of city centre	13 (140)	17.50 (188)	15 (161)
Financial return				
No data available				
Welfare/wellbeing				

	Lifetime Target	**March 2003**	**March 2006**
N. of new jobs	1,900	1,506	2,179
N. of construction job weeks	89,980	82,658	119,286
N. of training weeks	5,415	5,080	5,080
N. of new businesses	199	286	309

Number of occupied business premises		**2003**	**2009**	**Change**
	Grainger Town	939	1024	+9.0%
	Rest of city centre	1462	1385	-5.3%

Proportion of vacant business premises		**2003**	**2009**
	Grainger Town	26.1%	23.3%
	Rest of city centre	22.5%	25.1%

Percentage of creative occupation of England represented from NewCastle/Gat. Creative occupation	**2001**	**2006**
	0.6%	1.2%

N. of jobs directly supported from visitor economy	17,700
N. of jobs indirectly supported from visitor economy	4,900
Cultural value of properties/landscape	
No data available	

OAXACA DE JUAREZ, Mexico

City	Oaxaca de Juarez, Mexico
N. of inhabitants	255.029 (2010)
UNESCO sites	Yes
European Capital of Culture	-
Year of the project	2003

COSTS	
Federal Government (2003-2009)	7,819,858 US$
State Government (2003-2009)	553,744 US$
City Government (2003-2009)	5,027,082 US$
	Tot. 13,400,684 US$

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation

Annual number of visitors	**1999**	**2004**	**2005**	**2008**
	671,171	1,000,000	1,125,581	Around 900,000
Average daily travel cost				1.57 USD
N. of hotels (for each hotel room, there is one direct worker and three indirect workers)	**1999**	**2004**	**By 2005**	**2012**
	173	174	240	-
N. of hotels rooms	**1999**	**2004**	**By 2005**	**2012**
	5,111	5,140	5,922	6,370
Average room price (2015)				8,98 USD
Average hotel occupancy rate (2000-2003)				40%
N. of "units" in tourism sector (2004)			**Temporary accomodation**	194
			Food and beverage	1,859
			Other tourist service	68
			Tot	2,121
N. of establishments in various categories of accommodation (2012)				273
Average stay of visitors			**foreigners**	2.08 nights
			domestic	1.72 nights
N. of restaurants (2010)				1,500
Percentage of rooms occupied from foreigners in 2003				23%
Percentage of the contribution of hotels to tourism sector income				37%
Percentage of the contribution of hotels to tourism sector total revenues				48.8 %
Percentage of fixed assets represented by the tourism sector				5.8%

Percentage of crowding in restaurants during holidays			70-80%
Creative, cultural and innovative activities			
No data available			
Typical local productions			
N. of craft produces (2010)		**Oaxaca**	**Historic center**
		Between 22,000 and 25,000	2500
N. of craft stores (2010)			164
N. of establishments of preparation and food serving and beverages with tourist category (2012)			406
Percentage of wealth of the tourism sector generated from the food and beverage establishments			57% (with only 23 percent of capital investment)
Environment and Natural Capital			
No data available			
Community and Social Cohesion			
New federal funds to support activities of a non-profit organization (year 2010)			7.6 million US$
Real estate			
Percentage of residential real estate value increase			20% per year
Price of properties		**2000**	**2010**
	Historic Center	US$600 per sqm	US$1,200 per sqm
	Colonia Reforma	-	US$430 per sqm
	San Felipe del Agua	-	US$1,100 per sqm
N. of dwellings			10,720
N. of owned dwellings			5,896 (55%)
N. of rented dwellings			4,824 (45%)
Financial return			
Civil insurance to be paid from hotel to be formal and legal (public financial return)			US$110 every year
Welfare/wellbeing			
N. of vicinades (Units that hosts different families that share facilities - lavatories, kitchens, etc.)		**1997**	**2008**
		75	35
Average salary of workers in temporary accommodation establishments in 2004			US$198 (MX$2,601) per month
Average salary of workers in other tourist services in 2004			US$129 (MX$1,700) per month
Average salary of workers in food and beverage			US$82 (MX$1,081) per month

establishments in 2004	
N. of employees in tourism sector	10,000
N. of direct jobs generated by tourism in 2012	9,557
N. of indirect jobs generated by tourism in 2012	23,893
Percentage of job related to food and beverage sector	64%
Percentage of workers (tourism sector) employed in food and beverage establishments	66,6%
Percentage of employed population related to the tourism sector	12.8%
Percentage of the total workforce employed in hotels	28.8%
Cultural value of properties/landscape	
No data available	

Oporto, Portugal

City	Oporto, Portugal
N. of inhabitants	230.298 (2012)
UNESCO sites	Yes
European Capital of Culture	2001 (congiunzione con Rotterdam)
Year of the project	-

COSTS	
	-

MULTIDIMENSIONAL IMPACTS		
Tourism and Recreation		
N. of companies offering cruises on the river (2008)	8	
Creative, cultural and innovative activities		
No data available		
Typical local productions		
Percentage of workman and artisans in the HCO (2008)	22%	
Environment and Natural Capital		
N. of automobiles entered the HCO per day (2007)	14,000	
Community and Social Cohesion		
Percentage of the institutions within the HCO focus on social care	40%	
Percentage of non-profit organization	88%	
N. of institutions that provide homecare services	6	
N. of social centers	4	
Real estate		
Percentage of rental system	**2001**	**2008**
	78%	84%
Percentage of ownership home	**2001**	**2008**
	17%	11%
Percentage of subletting	**2001**	**2008**
	2%	5%
N. of social housing neighborhoods in HCO (2008)	48	
N. of residential buildings in WHS	**2001**	**2009**
	74%	17%

Percentage of vacant buildings of private property			79%
Percentage of vacant buildings publically owned			11.7%
Percentage of licences for new construction in HCO (2007)			36%
Percentage of licences for expansion and rehabilitation work in HCO (2007)			64%
N. of expansion and rehabilitation works (2007)	**Porto**	**ACRRU**	**HCO**
	178	52	7
N. of new construction (2007)	**Porto**	**ACRRU**	**HCO**
	143	37	4
N. of buildings renovated for residential use (2008)			56
N. of buildings renovated for commercial use (2008)			
N. of Façade rehabilitation(2008)			106
Financial return			
Percentage of grants on total cost of intervention for Rehabilitation of Leased Buildings (owners or tenants)			75%
Percentage of grants for recovery buildings on the total cost of intervention			20%
Welfare/wellbeing			
Percentage of merchants that made investments in their businesses (between 2006 and 2007)			71%
Percentage of residents in low-income households			60%
Average number of crimes per 1,000 inhabitants (2006)	**Sé and Vitória**		**HCO**
	111		23
Cultural value of properties/landscape			
Percentage of used historic building in World Heritage HCO (2009)			48%
Percentage of partially used historic building in World Heritage HCO (2009)			33%
Percentage of vacant historic building in World Heritage HCO (2009)			16%
N. of historic buildings with low preservation levels in HCO	**2001**		**2009**
	50%		7%

OTTAWA, Canada

City	Ottawa, Canada
N. of inhabitants	883.391 (2011)
UNESCO sites	Yes
European Capital of Culture	-
Year of the project	-

COSTS

	-

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation		
N. of visitors (Ottawa-Gatineau)	**2007**	**2008**
	7.62 million	7.68 million
Total tourism-related expenditures by all visitors (Ottawa-Gatineau)	**2007**	**2008**
	$ 1.18 billion.	$1.21 billion
Creative, cultural and innovative activities		
$ Spent by Production Companies (Film and Television Development Corporation) in Ottawa-Gatineau Area	**2003**	**2008**
	$4,221,644	$18,500,963
N. of City of Ottawa Public Art Commissions awarded to artists (2003-2008)		22
Total Value of City of Ottawa Public Art Commissions (2003-2008)		$1,646,622
$ Spent on Artist Professional Fees (% of Total)		$626,895 (38%)
N. of City and City-Funded Cultural Programs/Events (2008)		22,541
N. of Participants and Attendance at City and City-Funded Cultural Programs/Events (2008)		3,894,585
N. of artists (2006)	**Ottawa**	4,600
	Montreal	13,400
	Toronto	22,300
	Calgary	5,100
	Vancouver	8,200
	Canada	140,000
Concentration of artists on the overall labour force (2006)	**Ottawa**	0.9%
	Montreal	1.5%
	Toronto	1.6%
	Calgary	0.8%
	Vancouver	2.3%
	Canada	0.8%
Artists with bachelor's degree or higher (%)(2006)	**Ottawa**	55%

	Montreal	49%
	Toronto	50%
	Calgary	42%
	Vancouver	48%
	Canada	48%
Appraised value of the Fine Art Collection (that develops and manages an art collection, with a focus on works by local visual artists)	**2003**	**2008**
	$4.6M	$8.3M
N. of arts organizations that have received municipal funding through the City of Ottawa's pilot program (2007-2009)		21
N. of individual artists that have received municipal funding through the City of Ottawa's pilot program (2007-2009)		2
Typical local productions		
No data available		
Environment and Natural Capital		
No data available		
Community and Social Cohesion		
Number of Volunteers, 2008		23,795
Number of Volunteer Hours, 2008		486,879
Volunteer $ Value, 2008 (based on $17.62/hour)		$8,578,808
N. of arts and festival/fair organizations	**2004/05**	**2007/08**
	77	72
Real estate		
No data available		
Financial return		
Earned Revenue due to municipal investment	**2004/05** ($2,600,757)	**2007/08** ($4,243,042)
	$15,681,962	$20,805,927
Private Revenue due to municipal investment	**2004/05** ($2,600,757)	**2007/08** ($4,243,042)
	$7,969,110	$11,199,698
Provincial/Federal Investment due to municipal investment	**2004/05** ($2,600,757)	**2007/08** ($4,243,042)
	$6,393,445	$8,769,664
Other Revenue due to municipal investment	**2004/05** ($2,600,757)	**2007/08** ($4,243,042)
	$390,536	$1,092,909
Welfare/wellbeing		
Artists' median earnings (2006)	**Ottawa**	$15,800
	Montreal	$15,000
	Toronto	$18,300
	Calgary	$14,500
	Vancouver	$17,400
	Canada	$12,900
Cultural value of properties/landscape		
N. of properties designated to be of cultural		18

heritage value or interest (2003-2009)	
N. of district designated to be of special cultural heritage value (2003-2009)	1

PECS, Hungary

City	Pecs, Hungary
N. of inhabitants	148.856 (2012)
UNESCO sites	Yes
European Capital of Culture	2010
Year of the project	-

COSTS	
Actual funding for Pécs 2010 (2007-11)	€ 35.31 m
Actual expenditure of Pécs 2010 (2007-11)	€ 35.39 m

MULTIDIMENSIONAL IMPACTS	
Tourism and Recreation	
N. visitors in 2010	124,050
Increase in number of visitors compared to 2009	27.5%
Increase in foreign visitors compared to 2009	71%
Increase in tourist visits	71%
Creative, cultural and innovative activities	
N. of projects of ECoC cultural program	650
N. of events of ECoC cultural program	4,675
N. of participants in Opening ceremony	between 18,000 and 20,000
N. of participants in Hungarians in the Bauhaus	16,350 visitors in 3 months
N. of participants in Mihály Munkácsy's Christ Trilogy	70,000 visitors in 6 months
N. of participants in The Golden Age of the Zsolnay Exhibition (from the collection of László Gyugyi) -	12,600 visitors in 4 months
N. of a participants in Europe of the Eight	9,600 in 2.5 months
N. of projects involving artists from other countries	270
N. of projects with other ECoC	52
€ value of ECoC cultural programmes	€35m
Attendance at events	1m
Typical local productions	
No data available	
Environment and Natural Capital	
No data available	
Community and Social Cohesion	
N. of volunteers	780

Real estate	
No data available	
Financial return	
No data available	
Welfare/wellbeing	
N. people to gain access to the labour market by “New Jobs for Success” programme	150
Cultural value of properties/landscape	
No data available	

PERTH, Australia

City	Perth, Australia
N. of inhabitants	1,834 milioni (2012)
UNESCO sites	No
European Capital of Culture	No
Year of the project	-

COSTS

	-

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation		
Average expenditure per person per day		$116.02
Average visitor expenditure per person per day per accomodation (2008)		$50.21
Average visitor expenditure per person per day per travel (2008)		$62.50
Mean Annual Overnight Visitors		1,249,337
Average length of visit (days)		6.44
Total Annual Direct Visitor Expenditure		$939.5 mil
Percentage of annual direct visitors expenditure attributed to cultural heritage		37.28%
Annual direct visitor expenditure attributable to cultural heritage in the City of Perth		$350.2 million
Percentage of nights of Western Australians (2008)		18%
Percentage of nights of interstate visitors (2008)		22%
Percentage of nights of International visitors (2008)		60%
Average length of stay (days)		6.4
Percentage of international visitors		48.7%
Percentage of visitors based on accommodation type (2008) (interviews)		**Percentage**
	5 star hotel	4.7%
	Unit/apartment	16.8%
	3-4 star hotel	31.8%
	Backpackers	16.8%
	Other	37.4%
Percentage of Length of stay (2008) (interviews)	**1-3 days**	35.1%
	4-7 days	36.0%
	8-14 days	12.6%
	15+ days	16.2%
Percentage of Tourist based on transport (interviews)	**Private vehicle**	36.8%
	Scheduled bus / train	29.5%
	Hire vehicle	12.6%

	Package tour	10.5%
	Other	10.5%
Percentage of visitors for history/heritage/natural attractions reasons (2008)(interviews)		35.48%
Percentage of visitors considering important heritage aspect (2008)(interviews)		52.3%
Activities during stay in Perth (percentage)	**Activity**	**Percent**
	Parks / gardens	18.1%
	Bell Tower	12.3%
	Restaurants / pubs / nightclubs / bars	10.4%
	Monuments / memorials	9.6%
	Historic walks / Guided tours	9.0%
	Historic buildings / churches	8.6%
	Shopping for pleasure	8.4%
	Galleries / museums	8.1%
	Perth Mint	6.9%
	Movie / entertainment	3.4%
	Other	4.6%
Visited heritage place or experience during city visit (percentage)	Other non-heritage place or activity	53.4%
	Visited heritage place or experience	46.6%
Creative, cultural and innovative activities		
No data available		
Typical local productions		
No data available		
Environment and Natural Capital		
Community and Social Cohesion		
No data available		
Real estate		
No data available		
Financial return		
No data available		
Welfare/wellbeing		
No data available		
Cultural value of properties/landscape		
No data available		

PHILADELPHIA, Pennsylvania, United States

City	Philadelphia, Pennsylvania, United States
N. of inhabitants	1,553 milioni (2013)
UNESCO sites	Yes
European Capital of Culture	-
Year of the project	-

COSTS	
	-

MULTIDIMENSIONAL IMPACTS		
Tourism and Recreation		
Percentage of tourists to historical places (based on a survey – 2005)	47.5%	
Percentage of tourists to cultural heritage sites (based on a survey – 2005)	28.3%	
Percentage of tourists to historical places (based on a survey – 2005)	7.9%	
Percentage of tourists including historical or cultural activities in at least one trip (based on a survey – 2005)	81%	
Percentage of spending of heritage tourists compared with spending of other tourists (2005)	33%	
Contribution of heritage tourism to Commonwealth of Pennsylvania each year	over $3 billion	
Earnings supported by heritage tourism (2006)	almost $4 billion	
Creative and cultural/innovative activities		
Direct Spending in Philadelphia Attributable to Film, Television, and Video Production (in 2007 $Millions)	**1999**	$17
	2000	$31
	2001	$51
	2002	$60
	2003	$70
	2004	$91
	2005	$105
	2006	$68
	2007	$116
Typical food and beverage local productions		
No data available		
Environment and Natural Capital		
No data available		

Community and Social Cohesion					
No data available					
Real estate					
Immediate increase in values of homes after historic designation relative to the city average					2%
Annual rate ongoing increase in values of homes in historical district relative to the city average.					1 % higher
Percentage of average annual increase of house price with each mile closer to a national historic district that a house is located					1.6%
Percentage of average annual increase of house price with each mile closer to a local historic district that a house is located					0.5%
Residential Conversions of Historic Properties					$115
Total Earnings ($M) supported by direct expenditures on historic preservation resulted - Residential Conversions of Historic Properties					$19
Financial return					
Total Local Tax Revenues ($M) supported by direct expenditures on historic preservation - investment	**Federal Tax Credit Projects**	**by Private Owners**	**by Government and Non-Profit Entities**	**Residential Conversions of Historic Properties**	**Total Annual Impact, All Project Types**
	$2.2	$2.6	$0.7	$1.2	$6.6
Tax revenues by over $1.1 billion in total expenditures Commonwealth of Pennsylvania					over $24 million
Tax Revenues ($M) 1999-2009 Annual Average (in 2010$M)		**Philadelphia**	**Commonwealth**		
	Income Tax Revenues ($M)	$1.3	$3.7		
	Sales Tax Revenues ($M)	$0.2	$3.6		
	Business Tax Revenues ($M)	$0.8	$1.0		
	Total Tax Revenues ($M)	$2.2	$8.2		
Federal, state, and local taxes generated by heritage tourism (2006)					$1.5 billion
Welfare/wellbeing					
N. of jobs supported by heritage tourism (2006)					Over 128,000 jobs
N. of jobs supported by direct expenditures on historic preservation	**By Private Owners**			**By Government and Non-Profit Entities**	
	1,100			290	
N. of jobs supported by direct expenditures on					490

historic preservation resulted - Residential Conversions of Historic Properties		
Total Earnings ($M) supported by direct expenditures on historic preservation resulted - Investment	**By Private Owners**	**By Government and Non-Profit Entities**
	$42	$11
N. of jobs supported annually by over $1.1 billion in total expenditures Commonwealth of Pennsylvania		over 9,500 jobs
Earnings supported annually by over $1.1 billion in total expenditures Commonwealth of Pennsylvania		over $350 million
Earnings supported by Philadelphia 5-county area heritage tourism in Commonwealth of Pennsylvania each year.		$975 million
Money enjoined by the city in total expenditures (each year) - Total Output ($M) 1999-2009 Annual Average (in 2010$M)	**Philadelphia**	**Commonwealth**
	$224 million	$372 million
N. of jobs supported by total expenditures (each year) 1999-2009 Annual Average (in 2010$M)	**Philadelphia**	**Commonwealth**
	960	3,230
Earnings supported by total expenditures (each year) 1999-2009 Annual Average (in 2010$M)	**Philadelphia**	**Commonwealth**
	$36 million	$119 million
N. of jobs supported by direct expenditures on historic preservation resulted - Federal Tax Credit Projects		960
Cultural value of properties/landscape		
No data available		

PILSEN, Czech Republic

City	Pilsen, Czech Republic
N. of inhabitants	167.472 (2013)
UNESCO site	
European Capital of Culture	2015
Year of the project	-

COSTS	
Total budget for Pilsen2015	€18.2m
Expenditure for Pilsen2015 ECoC	€18.2m

MULTIDIMENSIONAL IMPACTS		
Tourism and Recreation		
Expenditure by visitors in 2015		€26m
N. of visitors to the city	**2014**	**2015**
	1.3 million	3.4 million
Increase in number of overnight stays compared to 2013		31.1%
Increase in guided tour		500%
Creative, cultural and innovative activities		
N. of participants to cultural events		1.4 million
N. of cultural events		600
N. of residents joined in “European Neighbour’s Day”		5,000
N. of people attending Manege Carre Senart		60,000
N. of spectators attending The Opening Ceremony: The Symphony of Bells		43,000
N. of people attending Jiri Trnka Studio Exhibition		244,000
N. of original works presented at Jiri Trnka Studio Exhibition		300
N. of people attending Munich – The Shining Metropolis of Art 1870 – 1918		7,000
N. of people attending the event “Pilsen Family Photo Album: A Paradise Among Four Rivers”		5,150
N. of people attending The Liberation Festival		219,000
N. of people attending Giant puppets in Pilsen (Skupa’s Pilsen festival)		73,000
N. of people attending Lively Street Festival		47,000
N. of people attending The Light Festival		40,000
N. of people attending Fresh Festival Pilsen 2015		33,000
N. of people attending The Historical Weekend or Pilsen’s Ghosts and Mummery		30,000

N. of people attending Bavarian Days	25,000
New investments in cultural amenities (i.e. new theatre)	48 mil Eur
Typical local productions	
No data available	
Environment and Natural Capital	
No data available	
Community and Social Cohesion	
N. of volunteers	515
Real estate	
No data available	
Financial return	
Tax revenues (external evaluation approved economic benefits for Czech Economy	6,26 mil. EUR
Welfare/wellbeing	
N. of new jobs (external evaluation approved economic benefits for Czech Economy)	693
Cultural value of properties/landscape	
No data available	

PLYMOUTH, England

City	Plumouth, England
N. of inhabitants	241.500
UNESCO site	Yes
European Capital of Culture	No
Year of the project	-

COSTS	
	-

MULTIDIMENSIONAL IMPACTS	
Tourism and Recreation	
N. of trips made by staying visitors in 2008	584,000
Total spend staying visitors	£99,704,000
N. of daily visitors in 2008	3,509,000
Total spend of daily visitors in 2008	£174,027,000
N. of visitors during Summer Festival	30,000
N. of people in Artemis Transat (2,800 miles race)	120,000
Total average daily spend in Artemis Transat (2,800 miles race)	£1,512,000
Creative and cultural/innovative activities	
N. visitors per day at Plymouth Summer Festival	over 30,000
Average visitor spend during Summer Festival	£92
Economic impact of the Theatre Royal per annum	£24.6 million
N. of creative enterprises	173
N. of tickets sold to Plymouth residents in 20 minutes for MTV Event 2014	10,000
Typical food and beverage local productions	
No data available	
Environment and Natural Capital	
No data available	
Community and Social Cohesion	
No data available	
Real estate	

No data available	
Public financial return	
No data available	
Welfare/wellbeing	
People employed in creative sector	4,000
Percentage of people who had attended a cultural place and reporting good health compared to those who had no (survey – 2013)	60%
Cultural value of properties/landscape	
No data available	

QUITO, Ecuador

City	Quito, Ecuador
N. of inhabitants	1,619 milioni (2010)
UNESCO site	Yes
European Capital of Culture	No
Year of the project	-

COSTS

Public Investments	
2000	8.1 US$ millions
2001	9.6 US$ millions
2002	10.2 US$ millions
2003	12.4 US$ millions
2004	18.9 US$ millions
2005	13.2 US$ millions
2006	14.5 US$ millions
2007	11.3 US$ millions

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation	
Average price per night in the main three hotels (after 2003)	US$250
Creative, cultural and innovative activities	
No data available	
Typical local productions	
No data available	
Environment and Natural Capital	
No data available	
Community and Social Cohesion	
No data available	

Real estate							
Average monthly cost of renting				**Stores**		**Housing**	
				1,500 US$ (for 100sqm)		500 US$ (for 100sqm)	
N. of building permits	**Contribution from**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
	Municipal	11	17	12	9	13	13
	Private	8	11	10	7	11	13
N. of project proposal	**Contribution from**	2000	2001	2002	2003	2004	2005
	Municipal	13	35	22	19	19	24

	Private	10	29	20	17	17	24

Percentage of commercial use	**1990**	**2003**
	6%	20%
Percentage of residential use	**1990**	**2003**
	63%	45%
Percentage of administrative, industrial use	**1990**	**2003**
	31%	35%
N. of permanent commercial booths		**2,335**
N. of housing units improved since 2003		121
Financial return		
No data available		
Welfare/wellbeing		

	Economic sectors	**Gender**	**Total DMQ**	**Urban Quito**	**AZQ**	**CHQ**
N. of Economically Active Population, EAP (2001)	**Primary**	Men	40,468	11,311	28,468	290 112 402
		Women	20,143	4,792	14,809	
		Total	60,611	16,103	43,277	
	Secondary	Men	139,468	100,264	37,470	3,203
		Women	48,115	36,330	11,290	1,172
		Total	187,583	136,594	48,760	4,375
	Teritary	Men	320,530	261,418	57,476	11,518
		Women	276,753	226,044	49,280	9,241
		Total	597,283	487,462	106,756	20,759
		Men	500,466	372,993	123,414	15,011
		Women	34,5011	267,166	75,379	10,525
		Total	845,477	640,159	198,793	25,536

	Men	**Women**
Percentage of EAP in primary	72%	28%
Percentage of EAP in secondary	73%	27%
Percentage of EAP in tertiary	55%	45%
N. of street vendors (before 2003)		10,000
N. of street vendors moved to new markets or new shopping center (after 2003)		8,000
Cultural value of properties/landscape		
Percentage of properties in poor condition	**Before 2003**	**By 2003**
	25 %	6 %
Percentage of historic building well preserved (2010)		**75.9%**
Percentage of historic building with minor problems (2010)		**11.5%**
Percentage of historic building with major problems (2010)		**12.6%**
Percentage of historic building in ruin (2010)		0

RIGA, Lettonia

City	Riga, Lettonia
N. of inhabitants	643.615 (2013)
UNESCO site	Yes
European Capital of Culture	2014
Year of the project	-

COSTS	
Percentage of funding of the City of Riga Budget	44%
Percentage of funding of the State Budget	45%
Funding of the EU Funds and other external sources	6%
Funding from the resources of partners and supporters	2%
Funding of the Foundation from ticket sales, marketing activities and other income	3%
Total expenditure for the Rīga 2014 ECoC programme between 2012 and 2014	**€27.3m**

MULTIDIMENSIONAL IMPACTS		
Tourism and Recreation		
Creative, cultural and innovative activities		
N. of projects of cultural programme in Rīga during 2014	488	
N. of participants in "The World Choir Games"	27,000	
N. of people attended EcoC activities	1.6m	
N. of visitors in KGB building and its featured exhibitions	85,000	
Percentage of Rīga's residents attended at least one ECoC activity in person	76%	
Percentage of Latvia's population attended at least one ECoC activity in person	51%	
Percentage of Rīga's residents attended at least one ECoC activity via the web, television or radio	67%	
Percentage of Latvia's population attended at least one ECoC activity via the web, television or radio	60%	
Target audience of ECoC Riga 2014 Projects (%)	Youth	55%
	Seniors	33%
	Low income residents	15%

	Specific ethnic groups	10%
	People with a disability	8%
	Specific minority groups	6%
	People from disadvantaged communities	4%
Typical local productions		
No data available		
Environment and Natural Capital		
No data available		
Community and Social Cohesion		
N. of volunteers	**from Riga**	2,202
	from near Riga	980
	from other Latvian regions	525
Real estate		
No data available		
Financial return		
No data available		
Welfare/wellbeing		
No data available		
Cultural value of properties/landscape		
No data available		

RUHR, Essen, Germany

City	Ruhr, Essen, Germany
N. of inhabitants	5,3 million
UNESCO site	Yes
European Capital of Culture	2010
Year of the project	-

COSTS

Actual financing of Essen for the Ruhr 2010	**Budget incl. refinancing (€ m)**	**%**
Federal funding	€ 18.0	22%
Region/ state funding	€ 12.5	15%
Ruhr Regional Association	€ 12.0	15%
Sponsoring and other sources	€ 11.2	14%
City of Essen	€ 6.0	7%
EU funding	€ 1.5	2%
Cultural Capital Foundation	€ 0.8	1%
Project refinancing	€ 13.6	17%
In kind contributions	€ 5.4	7%
TOTAL	**€ 81.0**	**100%**
Actual expenditure of Essen for the Ruhr 2010	**€ 81.0**	**100%**

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation	
Increase in tourist visits	18.5%
Creative, cultural and innovative activities	
N. of individual projects under the ECoC banner	5,500
N. of visitors and participants of the total ECoC events	10.5 million
N. of artists, architects and designers involved in ECoC events	260
N. of artist ECoC events	220
N. of visitors at 13 sites (Powerful Places for the Arts)	10,000
N. of theatre and dance events	350
N. of musical events	240
N. of events under “An instrument for every child”	50
N. of performances under SING– DAY OF SONG	600
N. of historical culture projects	9
N. of visitors at historical culture projects	424,000

N. of literature projects	9
N. of literary events	1,000
N. of visitors at literary events	67,000
Percentage of people attending an ECoC event	61%
Percentage of people attending two or more ECoC events	57%
Percentage of people attending more or many more events	53%
Percentage of people discovering new interesting places in the region	59%
N. of participants in multilateral co-operation projects	83,000
€ value of ECoC cultural programmes	€80m
Typical local productions	
No data available	
Environment and Natural Capital	
No data available	
Community and Social Cohesion	
N. of active volunteers in ECoC programmes	1,165
Working hours of volunteers in ECoC programmes	175,000
Events supported by volunteers	9,600
Percentage of people considering many events need to get involved in	96%
Real estate	
No data available	
Financial return	
No data available	
Welfare/wellbeing	
No data available	
Cultural value of properties/landscape	
No data available	

Salford, Manchester, England

City	Salford, Manchester, England
N. of inhabitants	72.750
UNESCO sites	
European Capital of Culture	No
Year of the project	-

COSTS

Total investment	**£120 million**

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation		
N. of visitors attracted by The Lowry	**In its first year**	**2006**
	over 1 million	850,000
N. of visitors attracted by the Imperial War Museum (2006)		290,467
N. of visitors from across the globe to Salford	**2007**	**2008**
	504,000	7.2 million
£ spent by visitors in Salford in 2008		420 million
N. of day visitors	**Local**	**Sub-regional**
	22,680	17,010
N. of staying visitors	18,576	20,088
£ spent by day visitors		£11 per person
£ spent by staying		£62 per person
Creative, cultural and innovative activities		
N. of cultural workshops		250
N. of participants to the cultural workshops		8.000
Typical local productions		
No data available		
Environment and Natural Capital		
No data available		
Community and Social Cohesion		
No data available		
Real estate		
No data available		
Financial return		

No data available		
Welfare/wellbeing		
N. of permanent jobs created by Salford Quays	**1987**	**By 2006**
	225	13,000
N. of new jobs created by The Lowry		6,500
N. of new jobs created by The Lowry MediaCity UK		15,000
N. of new trainee posts created by The Lowry MediaCity UK		1,500
N. of full time tourism-related jobs in Salford	**2007**	**2008**
		5,863
Cultural value of properties/landscape		
No data available		

SALVADOR DE BAHIA, Brazil

City	Salvador de Bahia, Brazil
N. of inhabitants	2,675 milioni (2010)
UNESCO sites	Yes
European Capital of Culture	-
Year of the project	-

COSTS	
Stage 1 to 7	**US$ 55,523,750**
Caixa Economica Federal (a governal-controlled savings and loan institution)	US$ 5.3 million
PRODETUR Program: tourism development program financed by the IDB	US$10.973 million
REMEMORAR Program: housing program funded by a residential leasing program and the Brazilian Ministry of Culture and an NGO	US$ 762,000

MULTIDIMENSIONAL IMPACTS		
Tourism and Recreation		
N. of hotels (2008-2009)	**HCS**	**Salvador**
	71	404
N. of beds (2008-2009)	**HCS**	**Salvador**
	2,914	34,592
N. of travel agencies (2008-2009)	**HCS**	**Salvador**
	33	522
Creative, cultural and innovative activities		
N. antique stores/second hand bookshops (2008-2009)	18	
N. archives (2008-2009)	5	
N. libraries (2008-2009)	7	
N. movie theatres (2008-2009)	3	
N. art galleries (2008-2009)	5	
N. museums (2008-2009)	19	
N. theatres (2008-2009)	2	
N. of cultural facilities (2008-2009)	78	
Typical local productions		
No data available		
Environment and Natural Capital		
No data available		

Community and Social Cohesion				
No data available				
Real estate				
Property prices (2010)	**HCS**	**Nazarè**	**Peninsula**	**Rio Vermelho**
	844.00 US$	888.00 US$	651.00 US$	1547.00 US$
Percentage of not used units (distribution of buildings)	**2000**		**2010**	
	19.9		13.3	
Percentage of residences (distribution of buildings)	**2000**		**2010**	
	12.9		47.4	
N. of new homes constructed by REMEMORAR Program	41			
N. of rehabilitated ruined building by PROHABIT Program	75			
N. of commercial units produced by building rehabilitation (PROHABIT Program)	55			
N. of commercial units produced by building rehabilitation (PHIS Program)	13			
N. of residential units produced by building rehabilitation (PHIS Program)	103			
Percentage of commerce (distribution of buildings)	**2000**		**2010**	
	30.6		23.7	
Percentage of industries (distribution of buildings)	**2000**		**2010**	
	-		0.7%	
Financial return				
No data available				
Welfare/wellbeing				
Average of lifespan of companies (years) (2008)		**Castro Alves-Misericòrdia**	**Sé-Pelourinho**	**Carmo-Santo Antonio**
	Up to 1	16.3	12.1	22.3
	1 to 3	13.8	13.6	15.2
	More than 3 to 5	18.7	13.1	17.9
	More than 5 to 10	17	25.6	17
	More than 10	34.3	35.6	27.7
Percentage of formal and informal activities	**Formal**		**Informal**	
	81.7%		18.3%	
Median worker income (Brazilean Reais)		**HCS**	**Salvador**	**Variation**
	2000	609	520	+17.12%
	2001	627	508	+23.4%
	2002	616	502	+22.7%
	2003	513	456	+12.5%
	2004	607	475	+27.8%
	2005	562	472	+19.1%
	2006	599	498	+20.3%
	2007	631	531	+18.8%

Total unemployment rate			**HCS**	**Salvador**
	1997-1999		19.1%	23.3%
	2001-2003		26.5%	26.5%
	2005-2007		22.4%	22.4%
Percentage of employment (2005-2007)	**Type of jobs**	**HCS**	**Salvador**	**Variation**
	Wage-earner, private sector	41.6	49.1	-15.27%
	Wage-earner, public sector	21.2	13.3	+59.4
	Home worker	6.1	9.4	-35.11%
	Self-employed	21.8	21.8	-
	Family business	2.0	1.4	+42.86%
	Employer	5.9	4.0	+7.50%
N. of minimum salaries			**HCS**	**Salvador**
	Up to 1		22.3	319
	1 to 2		22.5	25.9
	2 to 5		21.5	16.5
	5 to 10		9.6	6.4
	More than 10		3.4	2.8
Cultural value of properties/landscape				
Percentage of well-preserved buildings (2010)				87.6%
Percentage of buildings with minor problems (2010)				37.9%
Percentage of buildings with severe problems (2010)				6.2%
Percentage of buildings in ruins (2010)				6.2%

SIBIU, Romania

City	Sibiu, Romania
N. of inhabitants	425.906 (2012)
UNESCO site	Yes
European Capital of Culture	2007
Year of the project	-

COSTS

Ministry of Culture	€4.1m
Sibiu Local Council (through the Casa and Radu Stanca Theatre)	€8.2m
County Council	€0.5m
European Commission	€1.4m
Cultural operators contributions	€2.3m
Support from the 3rd European Ecumenical Reunions' budget	€0.4m
Total	**€16.9m**

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation

N. of tourists		1990	1995	2000	2007
	Romanians	356917	211539	116423	235873
	Foreigners	32113	23080	40415	92052
	Total	389030	234619	156838	327925

	2006	2007	Difference 2006-07
	RON	RON	%
Increase in turnover of hotels and pensions (economic impact)	17.268.555	19.081.753	10.5
Increase in turnover of Restaurants Bars (economic impact)	54.953.667	59.295.007	7.9
Increase in turnover of Tourist operators (economic impact)	10.604.340	12.057.134	13.7
Increase in turnover of Transportation sector (economic impact)	82.314.320	91.286.581	10.9
Percentage of increase in tourists in the first six months of 2007 (compared with 2005)			27%
Percentage of increase in number of overnight stays in 2007 (compared with 2005)			36%

Creative, cultural and innovative activities

N. of Museum	1990	2007
	17	19

N. of visitors to museums	**1990**		**2007**
	382773		708854
N. of cultural projects in cultural programme			867
N. of ECoC projects involving partners from other EU Member States			73
N. of projects involving partners from other countries			6
N. of visitors to cultural projects			1m
Economic impact in cultural productions and services	**2006**	**2007**	**Difference 2006-07**
	RON	RON	%
	31.955.874	34.371.738	7.6
Typical local productions			
No data available			
Environment and Natural Capital			
No data available			
Community and Social Cohesion			
N. of volunteers			more than 1200
N. of volunteers from other countries			35
Real estate			
	2006	**2007**	**Difference 2006-07**
	RON	**RON**	**%**
Increase in turnover in rents (economic impact)	12.424.745	13.418.724	8.0
Financial return			
No data available			
Welfare/wellbeing			
No data available			
Cultural value of properties/landscape			
No data available			

SKOPJE, Macedonia

City	Skopje, Macedonia
N. of inhabitants	536.271 (2012)
UNESCO sites	Yes
European Capital of Culture	-
Year of the project	2005

COSTS

World Bank (2005)	US$ 311,899
Organization and Institutions (after 2005)	US$ 2,443,401
TOT.	**US$ 2,755,300**

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation

N. of Nights Spent by tourists in Skopje		**2005**	**2009**
	Domestic	35,341	31,503
	Foreign	166,639	215,052
	Tot.	201,980	246,555

N. of foreign tourists per business per day to Restaurants, Cafés, Shops		**2005**	**Post 2005**
	In season	13,7	21,6
	Off season	5,5	15,4
	Average for year	9,6	18,5

Average daily expenditure of foreign tourists per business per day to Restaurants, Cafés, Shops	**Pre-2005**	**Post 2005**
	24 USD	37 USD

N. of locals per business per day to Restaurants, Cafés, Shops		**2005**	**Post 2005**
	In season	41.5	57.9
	Off season	21.4	37.9
	Average for year	31.5	47.9

Average daily expenditure of locals per business per day to Restaurants, Cafés, Shops	**Pre-2005**	**Post 2005**
	25 USD	33 USD

Admission price in Skopye museums	**Pre-2005**	**Post 2005 (2010)**
	1US$	2US$

Creative, cultural and innovative activities

Average Visitors Number per Year for Three main Museums/ Galleries in the Skopje Old Bazaar	**2000**	**2007**
	257,000	414,000

Numbers of Adult Visitors (not including school children) to Three main Museums/Galleries in the Skopje Old Bazaar		**2000**	**2009**
	Local visitors	5000	12,000
	Foreign visitors	7000	25,000
	Total number of	12,000	27,000

	visitors		
Typical local productions			
No data available			
Environment and Natural Capital			
No data available			
Community and Social Cohesion			
No data available			
Real estate			
Real estate price (euros/sqm)	**Pre-2005**	**Post 2005**	
	700 euros/sqm	1100 euros/sqm	
Financial return			
No data available			
Welfare/wellbeing			

N. of Employee per business in Restaurants, Cafés, Shops		**Pre-2005**	**Post-2005**
	In-season	3.1	5.3
	Off-season	2.8	5.0
	Average for year	3.0	5,2

N. of Staffing in museums	**Pre-2005**	**Post 2005 (2010)**
	13 employees	50 employees

Average monthly wage/salary levels (US$)		**Pre-2005**	**Post 2005**
	Managerial/admin	270 US$	515 US$
	Service/selling staff	185 US$	380 US$

Cultural value of properties/landscape	
No data available	

TALLINN, Estonia

City	Tallin, Estonia
N. of inhabitants	407.947 (2012)
UNESCO site	Yes
European Capital of Culture	2011
Year of the project	-

COSTS

	2007	2008	2009	2010	2011
Tallinn City Government expenditure on culture		€33.4m	€32.6m	€19.3m	€22.9m
Tallinn City Government expenditure on culture	€17.5m	€20.3m	€19.7m	€17.6m	
Tallinn City Government investment in culture & heritage protection		€15.3m	€11.3m	€3.5m	€4.4m
Tallinn City Government investment in culture	€10.9m	€13.5m	€7.0m	€4.3m	

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation

	2007	2008	2009	2010	2011
Tourist arrivals in Tallinn (all)	1,140,764	1,188,525	1,135,464	1,289,372	1,498,462
Tourist arrivals in Tallinn (foreign visitors)	965,232	1,022,467	999,500	1,141,695	1,333,761
Tourist arrivals in Tallinn (Estonian visitors)	175,532	166,058	135,964	147,677	164,701
Average length of stay for tourist visits (nights)	1.84	1.76	1.70	1.78	1.86
Number of tourist bednights	2,102,222	2,096,696	1,929,300	2,291,511	2,504,727
Tallinn foreign export revenue from tourism	€603m	€644m	€624m	€653m	-

Creative, cultural and innovative activities

	2007	2008	2009	2010	2011
No. Museums	31	31	31	44	44
No. Galleries and exhibition halls	47	47	47	40	40
No. Libraries	34	34	24	26	26
No. Concert halls	13	13	13	13	13
No. Theatres	13	13	13	14	14
No. Cinemas	4	4	4	4	4
Percentage of projects featured the commissioning or creation of new works					42%
Percentage of projects featured the performance or exhibition of new works					56%
Percentage of projects featured new events or activities					89%
N. of projects of ECoC programme					251
N. of events of ECoC programme					7,000
N. of visitors to ECoC programme events					2m

Percentage of projects featuring international exchanges					18%
Percentage of projects involving cultural operators in other countries					70%
€ value of ECoC cultural programmes					€ 6.975m
	2007	**2008**	**2009**	**2010**	**2011**
N. "arts, entertainment & leisure" businesses registered in Tallinn		623	452	1,850	2,049
N. arts, entertainment and recreation enterprises	376	513	644	1,577	
N. of projects involving cultural organizations in other countries					175
Typical local productions					
No data available					
Environment and Natural Capital					
	2007	**2008**	**2009**	**2010**	**2011**
N. Botanical gardens	1	1	1	1	2
N. Zoological gardens	1	1	1	1	2
Community and Social Cohesion					
	2007	**2008**	**2009**	**2010**	**2011**
N. of non-profit associations, foundations and institutions - arts, entertainment and recreation	1,263	1,360	1,442	1,552	
N. of culture centres, community centres and leisure centres	16	16	13	14	14
N. of active volunteers					600-700
Percentage of projects establishing new cooperation with organizations and/or artists in Estonia					87%
Percentage of projects establishing new cooperation with organizations and/or artists in other countries					85%
Real estate					
No data available					
Financial return					
No data available					
Welfare/wellbeing					
	2007	**2008**	**2009**	**2010**	
Employment in arts, entertainment & leisure			7,600	8,400	
Employment in arts, entertainment & recreation	7,600	5,500	6,300	7,700	
Cultural value of properties/landscape					
No data available					

LILLE, France

City	Lille, France
N. of inhabitants	227.560 (2010)
UNESCO sites	Yes
European Capital of Culture	2004
Year of the project	-

COSTS

La Ville de Lille	8.00 €m
Lille Métropole Communauté Urbaine	13.70 €m
Le Conseil Régional du Nord– Pas de Calais	10.70 €m
Le Conseil Général du Nord	6.70 €m
Le Conseil Général du Pas-de-Calais	3.35 €m
L'Etat et ses différents Ministères	13.70 €m
Union Européenne, villes et collectivités de l'Eurorégion	4.50 €m
Private businesses	13.00 €m
Total	**73,65 €m**

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation		
Percentage of increase in number of overnight hotel stays from 2003 to 2004		27,2 %
Average length of stay (days)	**2004**	50 % in hotel
		24% in house family
Average price of double rooms	**2003**	**2004**
	300,00 €	400,00 €
Overall hotel occupancy	**2003**	**2004**
	63%	70.3%
Percentage of international tourists		50%
Percentage of increase of restaurants tournover from 2003 to 2004		Between 7-13%
Creative, cultural and innovative activities		
Percentage of visitors for cultural reason		58%
Percentage of visitors stay for cultural temporary events		46%
N. of adult visitors for cultural reason (2004)		100,000
Percentage of visitors only for European Capital of Culture		27%
N. of cultural events		2,500
N. of participants in cultural events		9 million
N. of artists taking part in cultural activities		17,000

N. of schoolchildren taking part in the cultural events		66,000
Typical local productions		
No data available		
Environment and Natural Capital		
No data available		
Community and Social Cohesion		
N. of volunteers		17,800
Real estate		
No data available		
Financial return		
No data available		
Welfare/wellbeing		
N. of new jobs in touristic sector	**2012**	**2030**
	2,840	5,130
Average number of jobs in hotels (2004)		24,6%
Average number of jobs in stores	**2003**	**2004**
	63%	70,3%
Cultural value of properties/landscape		
No data available		

TURKU, Finland

City	Turku, Finland
N. of inhabitants	179.428 (2012)
UNESCO site	
European Capital of Culture	2011
Year of the project	-

COSTS

Budget at application stage, 2008-2012	55.000m
Expenditure of Turku 2011 Foundation and Projects, 2006-2012	55.495m

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation

	2007	2008	2009	2010	2011
N. of visitor in Turku Castle	132,263	119,823	113,207	108,054	121,024
N. of visitor n in Turku Cathedral (only tourist visits)	198,610	188,632	159,451	142,313	173,028
N. of visitor in Aboa Vetus & Ars Nova museums	184,396	169,158	167,751	170,000	170,000
N. of visitor in Turku Art Museum	29,925	22,870	30,311	25,913	80,848
N. of visitor in Maritime Centre Forum Marinum	52,000	78,591	119,511	117,651	118,862
Registered overnight stays of international tourists in Turku	205,853	199,542	175,484	159,717	161,490
Registered overnight stays of national tourists in Turku	584,703	590,339	590,024	599,339	644,262
All registered overnight stays in Turku	790,556	789,881	765,508	759,056	805,75
Level of tourists expenditure	274,191,000	281,499,000	276,300,000	255,204,000	333,822,000
Level of employment in tourism sector in Turku	1,939	2,102	2,161	1,967	2,607
Turnover in tourism sector in Turku	230,461,000	245,490,000	251,980,000	229,044,000	303,480,000
N. Visitors (2011)					2,000,000

Creative, cultural and innovative activities

	2007	2008	2009	2010	2011
Audience numbers in Turku City Theatre	66,757	48,500	69,012	61,899	64,916
Audience numbers in Åbo Svenska Teater - Turku Swedish Theatre	34,347	36,026	33,983	40,208	50,889
Audience numbers in Linnateatteri - The Castle Theatre	101,813	102,917	93,284	116,564	127,000
Audience numbers in AB Dance Company	19,843	20,424	31,589	24,354	29,379
Audience numbers in Dance Theatre Eri	23,480	23,250	25,361	26,260	29,379
Number of visits in Turku City Library	1,800,227	1,815,717	1,678,968	1,699,300	1,886,513
Listener number in City Orchestra And Concert	116,270	109,494	104,157	110,848	140,360

Hall					
Listener number of Turku Music Festival Foundation	14,754	8,200	12,567	13,381	34,594
N. of projects included in the ECoC culture programme					165
N. of artists, contributors and producers and volunteers involved in delivery of ECoC culture programme					20,995
N. of events within ECoC programme					8,000
€ value of ECoC cultural programmes					€ 35 680 900
Attendance at events of ECoC cultural programmes					Over 2m
Percentage of residents attending or participating in ECoC events (including young people, disadvantaged or "culturally inactive")					77%
Investment in cultural infrastructure, sites and facilities					€195m
Typical local productions					
No data available					
Environment and Natural Capital					
No data available					
Community and Social Cohesion					
N. of events and activities targeted nurseries, schools, hospitals, housing for the elderly and prisons					1,500
N. of volunteers in Turku 2011					400
N. of volunteers supporting individual projects					13,352
N. of projects supported by volunteers					65
Real estate					
No data available					
financial return					
No data available					
Welfare/wellbeing					
No data available					
Cultural value of properties/landscape					
No data available					

UMEA, Sweden

City	Umea, Sweden
N. of inhabitants	111.503 (2007)
UNESCO site	No
European Capital of Culture	2014
Year of the project	-

COSTS

Financing sources	2009- 14 (€m)	% on the total
Ministry of Culture	9.9	22
City of Umeå Municipality	7.6	17
Other State funding	7.5	16
Regional funding	5.7	12
Corporate sponsorship	3.5	8
EU (Melina Mercouri)	1.5	4
Ticket sales	2.5	5
Other	4.4	10
Other EU projects	2.2	5
International partners	0.8	2
Total	45,6	100

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation		
Increase in number of visitors (2013-2014)		15%
Increase in number of hotel nights booked (2013-2014)		21%
Increase in number of nights at all tourist accommodation (i.e. including hostels) (2014)		24%
Increase in hotel occupancy at weekends	**2013**	**2014**
	45%	55%
Increase in passenger traffic on the Wasaline ferry (2013-2014)		5%
Creative, cultural and innovative activities		
N. of visitors in Västerbottens museum		70,000
Audience to Burning Snow (Opening ceremony/ Seasonal Inauguration no.1)		55,000
Audience to Leonor Fini / Pourquoi pas? (Bildmuseet)		47,500
Audience to Northern Light (Closing ceremony)		11,000
Audience to Littfest		10,500

Audience to Elektra		10,000
Audience to Seasonal inaugurations (Seasons 2 to 7)		8,000
	2013	**2014**
Children involved in Kultur i skolan (“Culture in schools”)	9,370	13,210
Children involved in Kulturcentrum för barn och unga (“Cultural Centre for children and young people”)	3,667	4,132
Children involved in Kulturverket (“Cultural work”)	2,950	13,200
Children involved in Skapande skola (“Creative school”)	6,347	8,154
N. of artists involved		4864
N. of ticket sales		800000
Typical local productions		
No data available		
Environment and Natural Capital		
No data available		
Community and Social Cohesion		
M. volunteers		3400
Real estate		
No data available		
Financial return		
No data available		
Welfare/wellbeing		
No data available		
Cultural value of properties/landscape		
No data available		

VALPARAISO, Chile

City	Valparaiso, Chile
N. of inhabitants	249.897 (2014)
UNESCO sites	Yes
European Capital of Culture	-
Year of the project	-

COSTS

USD 73,000,000

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation

N. of commercial licences between 2003-2008	Financial Zone	Cerro Alegre and Cerre Concepcion	Port Quarter
	163	99	52

N. of licenses granted in retail and services for tourism	2003	2004	2005	2006	2007	2008	2009	2010
	49	43	56	47	37	37	51	7

N. of restaurants in 2008	Financial Zone	Cerro Alegre and Cerre Concepcion	Port Quarter
	28	32	8

N. of bars in 2008	Financial Zone	Cerro Alegre and Cerre Concepcion	Port Quarter
	16	13	9

N. of hotels in 2008	2003	2008
	1	24

N. of licenses granted in retail and services for industrial	2003	2004	2005	2006	2007	2008	2009	2010
	133	157	153	167	143	141	87	1

N. of licenses granted in retail and services for commercial	2003	2004	2005	2006	2007	2008	2009	2010
	654	647	680	732	606	610	1025	25

Creative, cultural and innovative activities

N. of licenses granted in retail and services for artisan	2003	2004	2005	2006	2007	2008	2009	2010
	18	14	16	9	8	9	8	0

Typical local productions

No data available

Environment and Natural Capital

No data available

Community and Social Cohesion

No data available

Real estate

Rent values of commercial-use		2003	2004	2005	2006	2007	2008
	Financial Zone and Cerro	-	670.49	-	1,093.51	431.14	690,72

properties US$	**Alegre and Cerre Concepciòn neighborhoods:**						
	Port area:	439.90	-	574.50	372.71	412.04	-

Rent values for residential properties (Financial Zone and Cerro Alegre and Cerre Concepciòn neighborhoods) US$	**2004**	**2005**	**2006**	**2007**	**2008**
	336.49	331.11	372.79	349.17	405.60

N. building permits between 2003-2008	41		
N. of permits granted for residential use	8 of 41		
Housing Vacancy rate		**1992**	**2002**
	Historic center	2.4% of the total dwellings (29 of 1215)	7.7% of the total dwellings (79 of 1024)
	Valparaiso Municipality	2.4%	5.1%
N of change of use of properties (2003-2008)	**Financial Zone**	**Cerro Alegre and Cerre Concepcion**	**Port Quarter**
	14	85	29
N. of changes of use from residential to commercial	105		
N. of changes of use from non-residential to residential	4		

Average value of property transactions	**Valparaiso Municipality**	**VWHS**
	US$90,068	US$77,138
Average monthly rent	US$116.00	
N. of registered properties for residential use	**2001**	**2008**
	159	131
N. of registered properties for commercial use	**2001**	**2008**
	14	43
N. of buildings fallen into disuse	19	
Public financial return		
No data available		
Welfare/wellbeing		
Average monthly income per household	US$ 290.00	
N. of direct and permanent jobs created by CORFO (Corporation for Production Promotion) - housing upgrading	250	
Cultural value of properties/landscape		
Percentage of building in good or acceptable state of conservation	78%	
Percentage of building in average condition state of conservation	13%	
Percentage of building in bad state of conservation	2%	
Percentage of damaged building	7%	

Verona, Italy

City	Verona, Italy
N. of inhabitants	258 274
UNESCO sites	Yes
European Capital of Culture	-
Year of the project	-

COSTS

Financed by the local government	€600,000

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation				
N. of tourists per day (2007)				11,400
N. of Italian tourist arrivals	**1998**	**2000**	**2004**	**2008**
	204,821	231,618	244,904	278,390
N. of foreign tourist arrivals	**1998**	**2000**	**2004**	**2008**
	282,294	316,511	304,081	334,313
Average nights spent by Italian tourist	**1998**	**2000**	**2004**	**2008**
	2.31	2.32	2.61	2.36
Average nights spent by foreign tourist	**1998**	**2000**	**2004**	**2008**
	2.22	2.21	2.36	2.19
N. of hotels			**Historic center**	**Rest of the city**
			51	65
N. of restaurants (2008)				150
N. of bars (2008)				310
N. of ethnic take-out restaurants (2008)				24
Creative, cultural and innovative activities				
Percentage of citizens satisfied of cultural facilities supply				73%
Typical local productions				
No data available				
Environment and Natural Capital				
Percentage of citizen agreed that the city is clean				80%
Percentage of citizens satisfied of green space				68%
Community and Social Cohesion				
No data available				
Real estate				
Citizens considering difficult to find good housing				64%

at a reasonable price		
Citizens considering easy to find good housing at a reasonable price		18%
Financial return		
No data available		
Welfare/wellbeing		
N. of businesses in historic center in 2008		1,424
Density businesses per hectare in 2008	**Historic center**	**Rest of the city**
	3.14	0.36
N. of businesses providing health-care services (on a total of 3,097 businesses)		391
Percentage of citizens satisfied with health services		80%
Percentage of citizens not satisfied with health services		4%
Percentage of citizens feeling safe in the city		90%
Percentage of citizen agreed that the city is a healthy place to live		85%
Cultural value of properties/landscape		
Percentage of citizens satisfied of buildings and street quality		65%

VILNIUS, Lithuania

City	Vilnius, Lithuania
N. of inhabitants	535.216 (2013)
UNESCO site	Yes
European Capital of Culture	2009
Year of the project	-

COSTS

Financing source	Euro (m)
Ministry of Culture/state budget	51,25
Vilnius City Municipality	11,40
European Union	1,32
Other	0,15
Total	**64,12**
Main expenditure, 2007-2010	**64,12**

MULTIDIMENSIONAL IMPACTS

Tourism and Recreation	
Percentage of increased tourism	15%
Creative, cultural and innovative activities	
N. of visitors in cultural events	3,000,000
N. of cultural, artistic and social projects	300
N. of implemented sub-projects for foreign and Lithuanian art students and young artists	13
N. of students involved in sub-project	800
Typical local productions	
No data available	
Environment and Natural Capital	
No data available	
Community and Social Cohesion	
No data available	
Real estate	
N. of new cultural venues with disabled access	18
N. of renovated public venues	11
Financial return	
No data available	

Welfare/wellbeing	
Percentage of Lithuania‘s residents giving the programme a positive evaluation	50%
Cultural value of properties/landscape	
No data available	

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Annex B

Dossier

DOSSIER

POZZUOLI

QUALE FUTURO PER L'AREA EX SOFER?

a cura di: *Arch. Francesca Nocca*
Dottoranda in Architettura - XXIX ciclo
Università degli Studi di Napoli Federico II

INDICE

1. Obiettivo degli incontri
2. Metodologia di lavoro: individuazione dei principali stakeholder e organizzazione di tavoli di confronto
3. Individuazione dell'area di intervento
4. Descrizione dell'area di intervento
5. Quadro normativo di riferimento
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    - 5c Piano Territoriale di Coordinamento della Città Metropolitana di Napoli
    - 5d Cartografia dell'Autorità di Bacino
    - 5e Masterplan della Linea di Costa
    - 5f Piano Urbanistico Attuativo approvato
    - 5g Proposta di revisione del PUA approvato
6. Punto di vista dell'amministrazione comunale
7. Analisi SWOT
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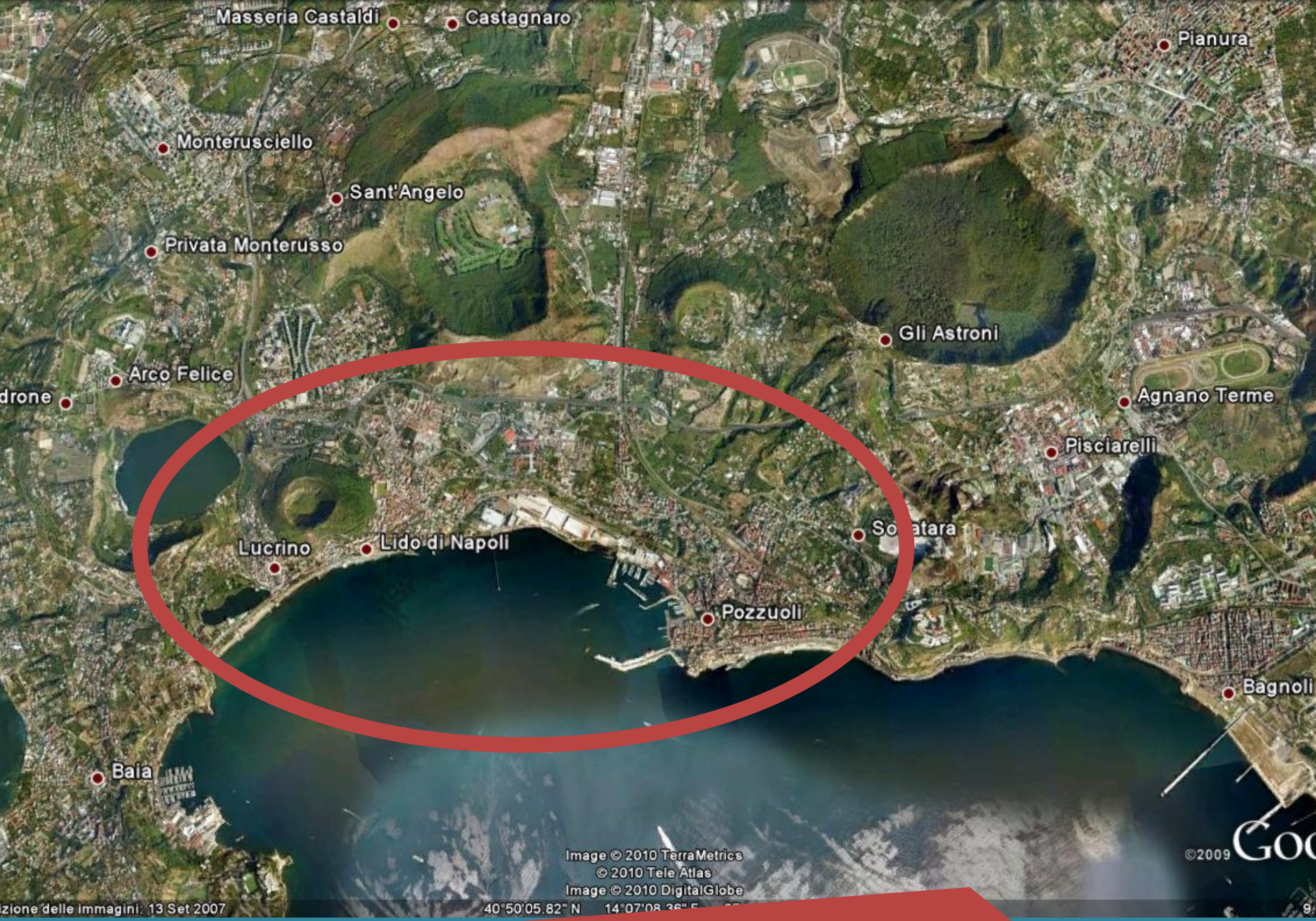
OBIETTIVO DEGLI INCONTRI

Obiettivo degli incontri è delineare possibili strategie di sviluppo dell'area occupata dagli impianti dell'ex stabilimento Sofer di Pozzuoli sito in Via Fasano.
Il progetto per la riqualificazione/rigenerazione/valorizzazione di tale area rappresenta un'occasione unica per Pozzuoli, un'opportunità strategica di primaria importanza per il rilancio dell'economia della città. Tale intervento mira a riconnettere la fascia costiera con il tessuto urbano, restituendola ai cittadini.
Ritrovando il suo naturale sbocco sul mare, Pozzuoli può tornare ad essere centro di confronto e scambio tra la produttività campana e il Mediterraneo, luogo di accoglienza turistica e centro di cultura.
L'area dell'ex stabilimento, pur rappresentando il cuore del progetto, non può prescindere dal contesto urbano in cui è situato, contesto caratterizzato da forti presenze, quali il **porto** e il **reticolo di beni culturali** che, sviluppandosi attorno ad esso, caratterizza la città di Pozzuoli.
Lo sviluppo del porto di Pozzuoli, unitamente alla realizzazione del terminal marittimo e al relativo collegamento viario in tunnel con il porto, rappresenta, ad esempio, un altro elemento strategico per il potenziamento della fruizione turistica della città e per rispondere all'incremento della domanda diportistica.
L'area, inoltre, deve necessariamente relazionarsi con le testimonianze del passato esistenti; l'intento è quello di attribuire alla città di Pozzuoli un nuovo volto, superando gli elementi-barriera attualmente presenti e rendendo fruibili le vaste risorse naturali e storico-archeologiche, oggi in gran parte precluse.
La riconquista non solo del rapporto con il mare, ma anche del rapporto con la città antica sommersa (testimone della lunga storia portuale della città), il potenziamento del porto, l'ottimizzazione della rete di accesso ai beni archeologici e culturali, e ancora il completamento del recupero del centro antico, contribuiranno a sviluppare e consolidare nel tempo il ruolo strategico della città di Pozzuoli.

Il processo partecipativo mira a definire, a partire da un'attenta analisi dell'area, delle sue potenzialità e problematicità, linee di progetto condivise.

Il fenomeno della dismissione dei siti industriali derivante da trasformazioni strutturali del sistema economico in generale, ed industriale in particolare, impatta fortemente sulla struttura delle città causando impatti negativi anche sui sistemi culturali, sociali e ambientali.
La questione degli impianti dismessi rappresenta un grosso ostacolo per il governo del territorio ma, allo stesso tempo, proprio dal recupero di tali aree può senza dubbio partire il processo di rigenerazione urbana.
Mancanza di risorse e difficoltà gestionali fanno sì che gran parte delle aree urbane occupate da impianti industriali dismessi sia ancora in attesa di un intervento.


Masseria Castaldi
Castagnaro
Pianura
Monterusciello
Sant'Angelo
Privata Monterusso
Gli Astroni
Arco Felice
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Agnano Terme
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Lucrino
Lido di Napoli
Pozzuoli
Bagnoli
Baia
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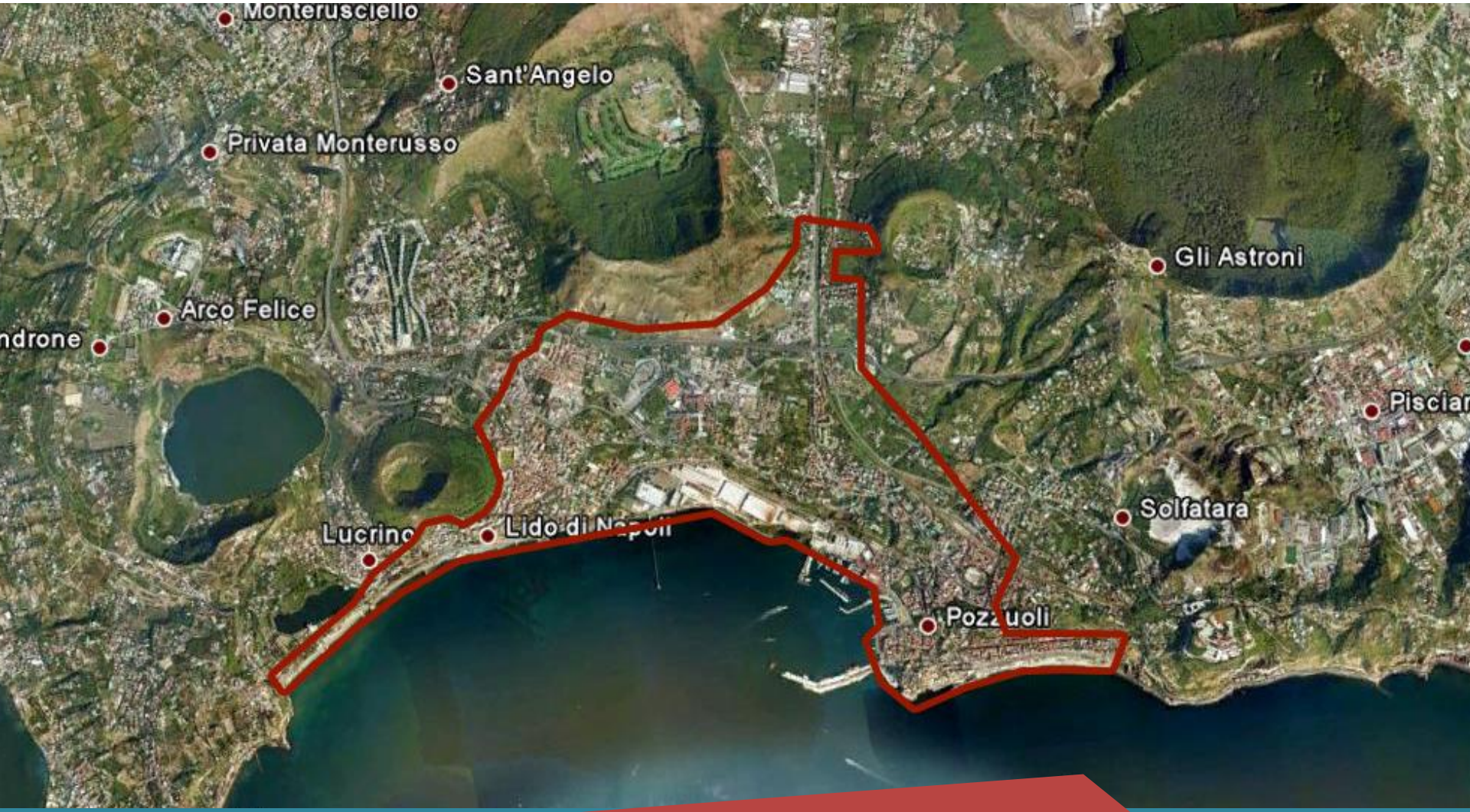
METODOLOGIA DI LAVORO

La prima fase di lavoro per la definizione di possibili scenari/prospettive per l'area oggetto dell'intervento prevede l'istituzione di tavoli di confronto e una serie di incontri con i diversi stakeholder.
Tale processo partecipativo è strutturato per mezzo di specifici incontri: con i rappresentanti delle istituzioni, con organizzazioni economico-professionali e sindacali, con i cittadini.

	PARTECIPANTI
RAPPRESENTANTI DELLE ISTITUZIONI	Regione Campania
	Città metropolitana di Napoli
	Comune di Napoli
	Soprintendenza per l'Archeologia, Belle Arti e Paesaggio
	Autorità di Bacino Regionale della Campania Centrale
	Autorità Portuale
	Capitaneria di Porto Pozzuoli
ORGANIZZAZIONI ECONOMICO-PROFESSIONALI E SINDACALI	Ordine Professionale dei Geologi
	Ordine Professionale degli Architetti
	Ordine Professionale degli Ingegneri
	ACEN (Associazione Costruttori Edili Napoli)
	Unione Industriali
	Sindacati
CITTADINI	Associazioni

INDIVIDUAZIONE DELL'AREA DI INTERVENTO

L'ambito urbano di riferimento è costituito dall'area occupata dagli impianti dello **stabilimento dismesso della Sofer e** da quello ancora attivo della **Prysmian**. Tale area, che costituisce il cuore del progetto, non può prescindere dal rapporto con il **reticolo di beni culturali** che la circonda e dal **porto** situato nelle immediate adiacenze.
Alla luce di quanto detto è stata individuata, a partire dalle **particelle censuarie dell'ISTAT**, la seguente perimetrazione:



Proprietaria dell'area dell'ex Sofer è attualmente la società **Waterfront Flegreo S.p.a.**, società costituita con lo scopo della "riconversione e valorizzazione dei centri urbani degradati, delle aree industriali dismesse e delle fasce costiere". Tale società concentra la propria attività nel progetto di acquisizione, valorizzazione e sviluppo, mediante riqualificazione, delle aree attualmente occupate dal complesso industriale dismesso ex Sofer.

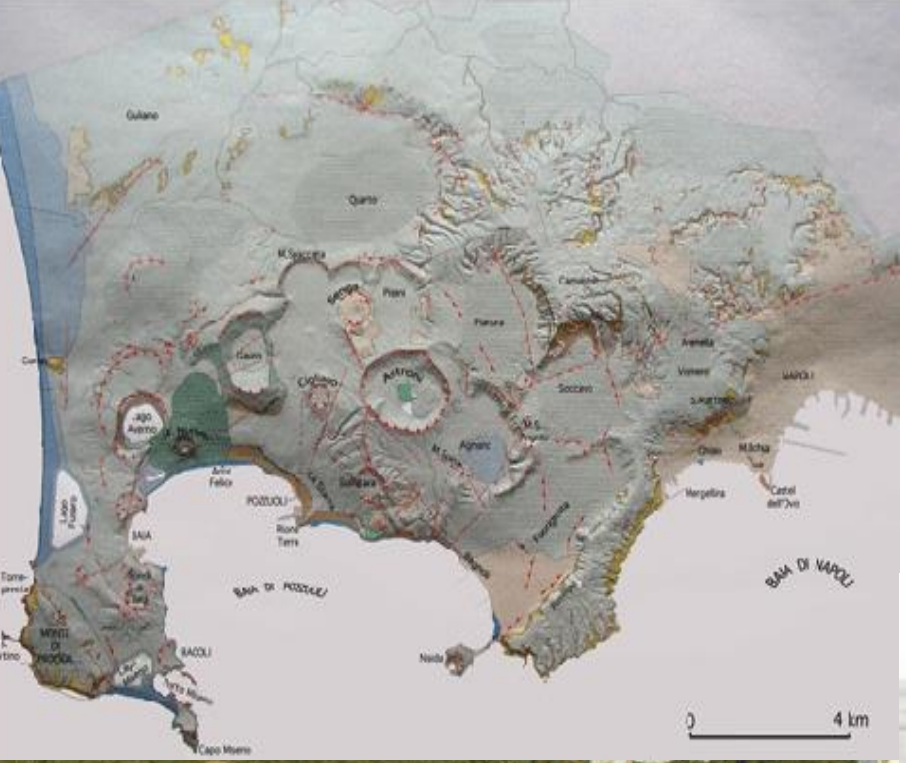
In considerazione dell'eccezionale rilevanza di interesse pubblico, per il rilancio dell'economia e per lo sviluppo turistico-culturale, commerciale e artigianale, su disposizione del Comune di Pozzuoli è stato predisposto un "Masterplan" comprendente tutti gli interventi della fascia costiera di Pozzuoli. Per tale attività è stato sottoscritto un protocollo di intesa con il Comune di Pozzuoli per la nomina di un gruppo di progettazione di livello internazionale costituito dallo studio Eisenman Architects di New York e da un gruppo interdisciplinare, composto da membri designati dal Comune di Pozzuoli e dalla Waterfront S.p.A. A seguito dell'approvazione del Masterplan Generale, la Waterfront Flegreo ha incaricato l'arch. Peter Eisenmann di elaborare il Piano Urbanistico Attuativo per la riqualificazione e riconversione dell'area ex Sofer.

DESCRIZIONE DELL'AREA DI INTERVENTO

La città di Pozzuoli, di cui fa parte l'area oggetto dell'intervento, è una città patrimonio di cultura e di storia, una terra segnata da fenomeni geologici che ne hanno determinato un paesaggio unico.
Elemento nodale è rappresentato dal **mare**. Il mare ha sempre avuto un legame profondo con Pozzuoli: è l'elemento da cui la città trae buona parte della propria vita e su cui si affacciano le testimonianze delle diverse culture che si sono succedute nel tempo.
In passato è stato predominante il ruolo della città sui traffici commerciali via mare con tutto il Mediterraneo. A seguito degli sviluppi urbani ed edilizi, nonché industriali, accompagnati da un'eccessiva trascuratezza del luogo, l'importanza dei Puteolani sui traffici navali è andata, con il tempo, diminuendo. Infatti, Pozzuoli ha subito nel tempo un cambiamento non soltanto fisico, ma anche e soprattutto economico e sociale. Considerando la "risorsa mare" come punto forte del territorio comunale, attraverso una valorizzazione della linea di costa, è possibile rigenerare l'economia locale.

Nel corso degli anni è sorta una barriera che ha separato sempre più profondamente la città dal mare, un muro fatto di cemento legato ad attività industriali che oggi non sono più attive. Infatti, dopo una prima grande crisi nel 1993, nel 2003 gli stabilimenti ex Sofer sono stati chiusi dopo oltre 100 anni di attività.

Le **origini del complesso industriale ex Sofer** risalgono alla fine dell'800, quando l'industria britannica Armstrong venne autorizzata ad impiantare a Pozzuoli una fabbrica metallurgica per la costruzione di artiglierie navali. Successivamente, in seguito ad un periodo di crisi post bellico (1929), lo stabilimento passò al gruppo Ansaldo.
Nel 1948 questi stabilimenti passarono sotto il controllo dell'IRI, come diramazione della finanziaria Finmeccanica, iniziando così anche la costruzione di materiale rotabile ferroviario, prima con l'insegna degli stessi S.M.P. (Stabilimenti Meccanici di Pozzuoli) per proseguire nel 1957 con l'Aerfer ed infine nel 1967 con la SOFER.
Nel tempo lo stabilimento ha raggiunto i 170mila metri quadrati di estensione.



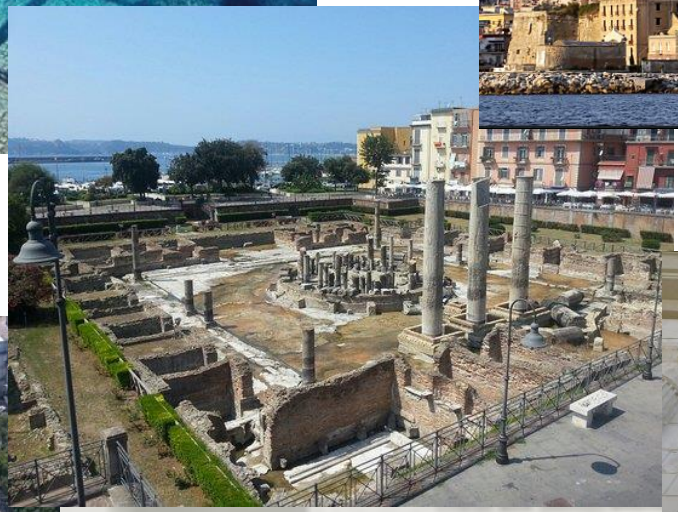
Qualsiasi intervento relativo all'area ex Sofer, ma più in generale alla città di Pozzuoli, non può prescindere dai fenomeni naturali cui l'area è soggetta. E' necessario cioè coniugare il progetto e le ipotesi di sviluppo con i fenomeni naturali che caratterizzano Pozzuoli, in particolare il **bradisismo**.

L'area dei Campi Flegrei, di cui Pozzuoli fa parte, è una vasta area di **origine vulcanica** dalla struttura singolare: non un vulcano dalla forma di cono troncato, ma una vasta depressione o caldera.
Formatasi da una serie di eruzioni che hanno dato vita al sistema di crateri dell'area (terrestri e sommersi), rappresenta uno dei vulcani attivi potenzialmente più pericolosi al mondo. La natura vulcanica dei terreni in queste zone determina altresì un alto livello di sismicità che, affiancato ai costanti fenomeni di bradisismo, scuotono la popolazione flegrea ad intervalli regolari. Se da un lato la presenza di tali fenomeni naturali rappresenta un incubo per gli abitanti, dall'altro è proprio questo peculiare sistema ambientale ad aver determinato un **particolare quadro paesaggistico e naturalistico**, caratterizzato da un verde naturale di grande pregio, spunti panoramici ed un florido sistema di specchi d'acqua.
Ricchissima non solo di risorse paesaggistiche culminanti nei grandi crateri vulcanici, la città di Pozzuoli presenta risorse archeologiche sparse su tutto l'ambito, a testimonianza della presenza di una storia antica di grande valore. Molti sono gli **attrattori culturali** che caratterizzano la zona (indicati alla pagina successiva), come il Rione Terra, l'anfiteatro Flavo, il Tempio di Augusto, le Terme, il Macellum (Tempio di Serapide - che ha rappresentato per alcuni secoli l'indice metrico più prezioso e preciso per misurare il fenomeno del bradisismo, uno straordinario strumento di registrazione delle variazioni del livello del suolo di Pozzuoli).
Il fenomeno del **bradisismo** che caratterizza l'area consiste in un lento movimento di sollevamento e abbassamento del suolo. Le fasi di abbassamento, che attualmente rappresentano la condizione normale, sono asismiche e sono caratterizzate da bassa velocità. Le fasi di sollevamento presentano invece maggiore velocità del moto del suolo e sono accompagnate da intensa attività sismica locale.


Stadio Antonino Pio
Necropoli romana
Portus Iulius
Tempio di Nettuno
Tempio di Serapide
Anfiteatro Flavio
Rione Terra
Tempio di Augusto

Città sommersa - Portus Julius

Rione Terra



Macellum (Tempio di Serapide)

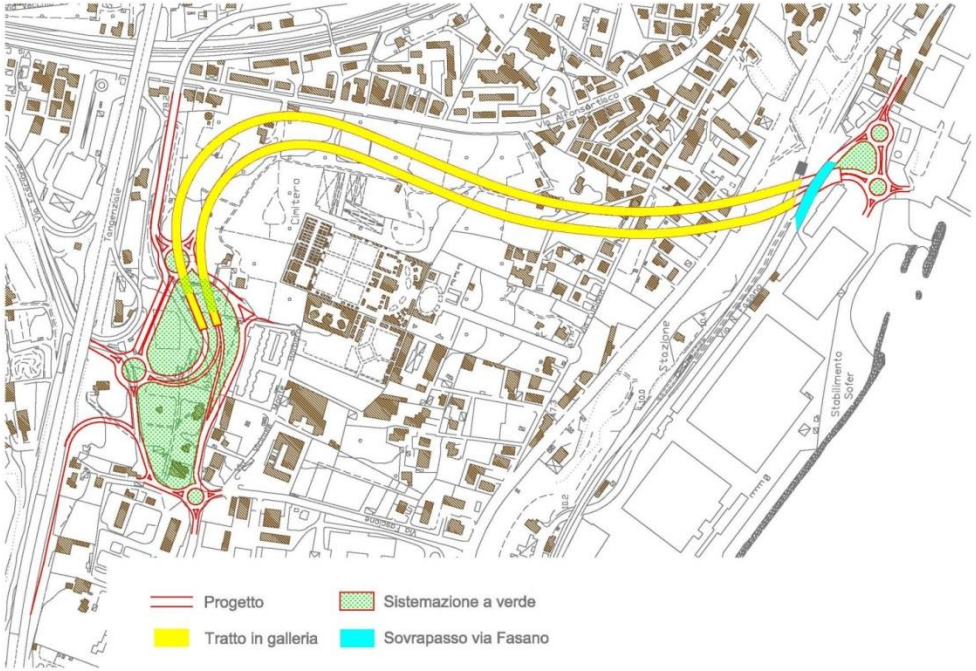
Anfiteatro Flavio

Tempio di Augusto

Tempio di Nettuno

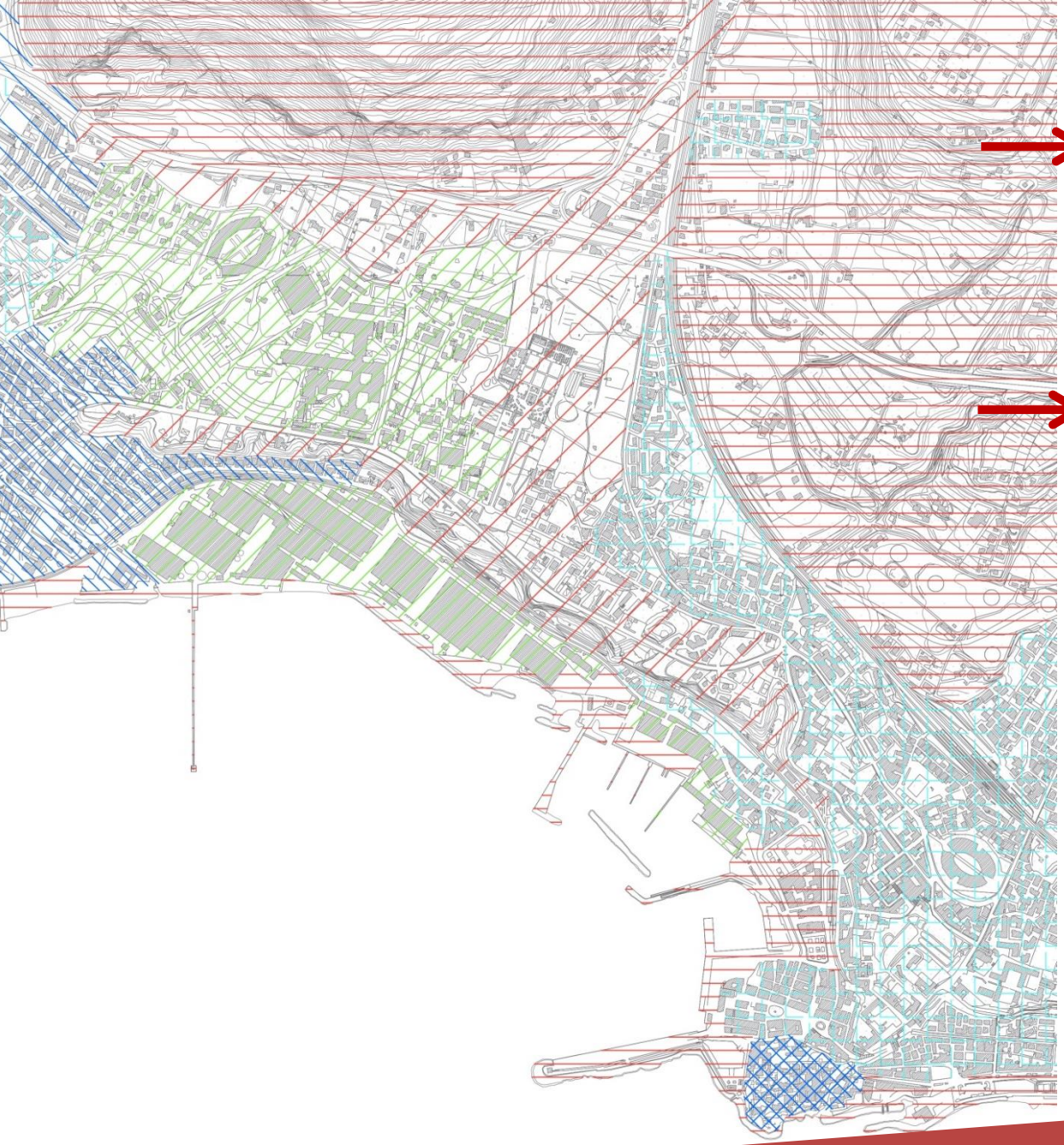
Adiacente all'area ex Sofer, sul fronte occidentale, sono situati gli impianti dello stabilimento ancora attivo della Prysmian.
La **Prysmian S.p.A.**, fino al 2005 nota come Pirelli Cavi, è l'azienda leader mondiale specializzata nella produzione di cavi per applicazioni nel settore dell'energia e delle telecomunicazioni e di fibre ottiche.
Lo stabilimento di Pozzuoli produce cavi sottomarini impiegati per realizzare i più grandi collegamenti esistenti al mondo.
Il gruppo Prysmian sviluppa prodotti e sistemi su misura per le specifiche esigenze dei clienti e fonda gran parte della sua forza competitiva sulle attività di ricerca e sviluppo, sull'innovazione dei prodotti e dei processi di produzione e sull'impiego di tecnologie avanzate.

Al fine di migliorare la viabilità e decongestionare il centro storico dal traffico diretto agli imbarchi, è stata progettata una bretella di raccordo in galleria. In particolare, l'opera consiste nella realizzazione di **due tunnel**, con opposti sensi di marcia, che collegheranno l'uscita della **tangenziale di via Campana con il porto di Pozzuoli (L. 887/84).** La galleria ha una lunghezza di 1160 metri.



Committente: COPIN – Consorzio per l'attuazione del piano intermodale dell'area flegrea

5a. QUADRO NORMATIVO DI RIFERIMENTO – PIANO PAESISTICO



LEGENDA

- RECUPERO DELLE AREE INDUSTRIALI
- AREE PER LA RICERCA TECNOLOGICA
- RESTAURO DEL CENTRO STORICO RIONE TERRA
- ZONE SATURE PUBBLICHE
- ZONE SATURE PRIVATE
- AREA DEPURATORE CUMA
- AREE A PROTEZIONE INTEGRALE
- AREE DI PROTEZIONE INTEGRALE CON RESTAURO PAESISTICO
- RECUPERO AMBIENTALE DELLE AREE DI DISCARICA
- AREE DI RECUPERO URBANISTICO EDILIZIO E RESTAURO PAESISTICO

PIANO PAESISTICO
(approvato il 26/04/1999)

L'area oggetto dell'intervento è inquadrato da un punto di vista paesaggistico prevalentemente in zona **"A.R.T. – Aree di Ricerca Tecnologica"** e parte in zona **"P.I. – Protezione Integrale".**

Art. 11 - Zona P.I. (Protezione Integrale)

Descrizione dei confine

La zona P.I. comprende gli elementi e le aree geologiche, naturalistiche, ambientali, paesistiche, archeologiche più rilevanti dei Campi Flegrei: Monte Ruspino; Solfatara ; Astroni; Fondi di Cigliano; Montagna Spaccata; Campiglione; Monte S.Angelo ; Monte Nuovo; Lago D 'Averno; Fondi di Baia; Punta del Poggio e Punta di Pennata; Lago Miseno; Lago di Fusaro; area archeologica di Cuma . La zona comprende, altresì, l'intera fascia costiera, dal confine col comune di Napoli interrottamente fino al confine col comune di Giugliano in Campania e tutta la fascia di mare per una distanza di 500 m. dalla linea di costa. I confini di ogni singola area sono individuati nelle tavole di zonizzazione.

2. Norme di tutela

L'area in oggetto è sottoposta alle norme di tutela di Protezione Integrale (P.I.).

3. Interventi ammissibili

- Interventi volti alla conservazione e al miglioramento del verde secondo l'applicazione di principi fitosociologici che rispettino i processi dinamico evolutivi e delle potenzialità della vegetazione della zona;
- interventi di prevenzione dagli incendi con esclusione di strade tagliafuoco;
- interventi di risanamento e restauro ambientale per l'eliminazione di strutture ed infrastrutture in contrasto con l'ambiente, di cartelloni pubblicitari e di altri detrattori ambientali;
- interventi di sistemazione della viabilità pedonale e carrabile attraverso l'utilizzazione di quella esistente per consentire una migliore fruizione dei valori paesistici e panoramici .

4. Divieti e limitazioni

- E' vietato qualsiasi intervento che comporti incremento dei volumi esistenti; è vietata la costruzione di strade rotabili e di qualsiasi tipo; sono vietati gli attraversamenti di elettrodotti o di altre infrastrutture aeree; è vietata l'utilizzazione della cave esistenti nella zona. E' vietata l'alterazione dell'andamento naturale del terreno e delle sistemazioni idrauliche agrarie esistenti.
- E' vietato il taglio e l'espianto delle piante di alto fusto nonchè il l'espianto della vegetazione arbustiva, tanto di essenze esotiche, quanto di macchia mediterranea spontanea. Le essenze da espiantare a causa di affezioni fitopatologiche devono essere sostituite con le stesse essenze; qualora si tratti di essenze estranee al contesto paesistico colturale dovranno essere sostituite da specie indigene o compatibili al suddetto contesto. Eventuali interventi di sostituzione di essenze estranee al contesto paesistico colturale dovranno essere graduali e programmati. I progetti dovranno essere sottoposti al parere dell'Orto Botanico dell'Università di Napoli "Federico II". La necessità di abbattimento di piante di alto fusto per motivi di sicurezza va comunicata, per l'autorizzazione, agli uffici del Corpo Forestale dello Stato. E' fatta eccezione per i tagli e gli espianti strettamente necessari per gli scavi e il restauro dei monumenti antichi da parte delle competenti Soprintendenze.

5. Uso del suolo

Nei complessi vegetazionali naturali devono essere effettuati, a cura dei proprietari e dei possessori, anche utilizzando le disponibili provvidenze di legge statale e regionale, gli interventi atti ad assicurarne la conservazione e la tutela. In particolare gli interventi devono tendere al mantenimento ed alla ricostituzione e riqualificazione della vegetazione tipica dei siti.

Questi ultimi interventi dovranno essere effettuati con progetto da sottoporre a parere dell'Orto Botanico dell'Università di Napoli "Federico II".

E' consentito l'uso agricolo del suolo, se già praticato e anche attraverso la ricostituzione delle colture agrarie tradizionali con le seguenti prescrizioni:

- è vietato l'impianto di nuove serre, di qualsiasi tipo e dimensione
- è vietata l'aratura oltre i cinquanta centimetri di profondità nelle aree di interesse archeologico di cui al punto 2 dell'art. 5 della presente normativa;
- è vietata l'introduzione di coltivazioni esotiche ed estranee alle tradizioni agrarie locali;
- è vietato l'uso di pesticidi chimici di I, II, III classe, secondo le direttive C.E.E.;
- è vietato l'impiego di mezzi e tecniche di coltivazione che comportino una riduzione delle potenzialità produttive del suolo e di altre risorse primarie;
- è vietata la sostituzione di colture arboree con colture erbacee.

6. Fascia marina

Per la fascia marina di 500 m. antistante la costa dell'intero ambito, entro dodici mesi dall'entrata in vigore del Piano Paesistico, dovrà essere redatto, in collaborazione con gli Enti e con gli organismi competenti, un Piano Particolareggiato Marino che delimiti gli specchi d'acqua da destinare a Parchi Archeologici Subacquei e che regolamenti l'uso dell'intera fascia marina, con particolare riferimento alla navigazione sia da diporto, sia commerciale, agli ormeggi, alla pesca, alla mitilicoltura ed eventuali vivai ittici.

Tale Piano Particolareggiato regolamenterà specificamente anche le attività del porto commerciale di Baia e dell'insenatura di Miseno, compresa Punta Pennata che, per le loro caratteristiche storico archeologiche, sono specchi d'acqua maggiormente interessati alla costituzione del parco archeologico marino. Sulla base, anche del completamento delle indagini archeologiche sui fondali, andrà prevista la delocalizzazione del porto di Baia.

Nelle more dell'approvazione di tale Piano Particolareggiato, devono essere soggette a parere preventivo della Soprintendenza Archeologica gli interventi, anche straordinari, che interessino fondali marini. Relativamente al porto commerciale di Baia, considerati i gravi danni arrecati ancora in tempi recenti dalle navi alle strutture antiche sommerse, l'accesso a detto porto rimane al momento consentito solo alle navi il cui pescaggio non superi i 4 metri di profondità a pieno carico in grado di accedere al porto attraverso l'antico canale del porto romano. Pertanto il tracciato di quest'ultimo dovrà, a cura e spese dell'ente competente per la gestione del Porto e sotto la direzione della Soprintendenza Archeologica, essere scavato e segnalato in superficie. Relativamente al Portus Iulius ed alla Ripa Puteolana, la relativa area dovrà essere delimitata da galleggianti, a cura della Capitaneria di Porto e degli Enti competenti, e vigilata al fine di evitare attività che ne danneggino le strutture esistenti.

Art.15 - Zona A.R.T. (Aree di Ricerca Tecnologica)

1. Descrizione dei confini

La zona A.R.T. comprende l'intero complesso e le aree limitrofe dello stabilimento Olivetti e l'area industriale costiera nel Comune di Pozzuoli nonchè il complesso e le aree limitrofe dello stabilimento Alenia nel comune ai Bacoli. I confini della zona sono individuati nelle tavole di zonizzazione.

2. Norme di tutela

La zona in oggetto è sottoposta alle norme di tutela per le Aree di Ricerca Tecnologica (A.R.T.).

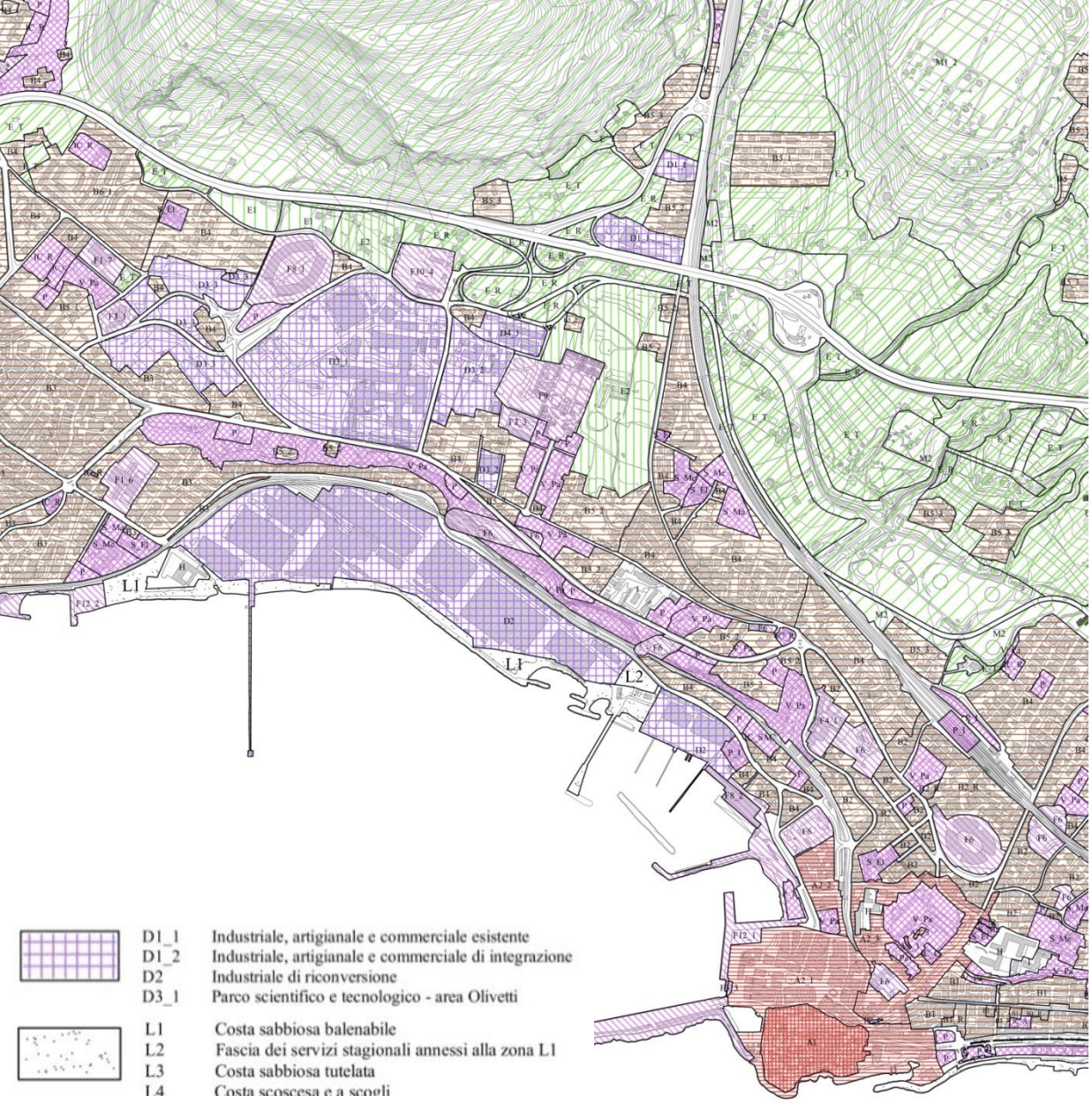
3. Interventi ammissibili

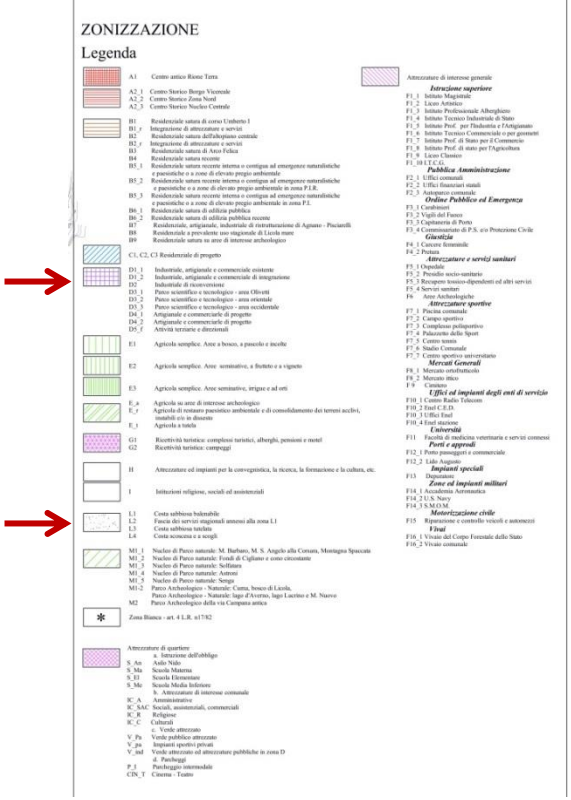
- In tale zona è consentita la manutenzione ordinaria e straordinaria degli impianti attivi alla data di adozione del presente piano e la riconversione industriale, anche mediante la ristrutturazione urbanistica come disciplinata dall'art. 7 punto 7 * della presente normativa e comunque senza incremento delle volumetrie esistenti. Le architetture di particolare pregio architettonico o di interesse storico vanno conservate.
- E' ammesso l'ampliamento e il nuovo insediamento di attività scientifico-tecnologiche mediante piani di dettaglio che saranno valutati preventivamente ai fini dell'incidenza paesistica e ambientale dalla Soprintendenza competente.
- Le aree rese disponibili dalla dismissione delle attività industriali devono essere sottoposte a recupero paesistico ambientale e destinate ad attività compatibili con il carattere e le vocazioni specifiche di ciascuna di esse nell'ambito del comprensorio dei Campi Flegrei (scientifico-tecnologiche; culturali, turistiche; produttive; infrastrutturali, ricettive e per il tempo libero).

* 7. Ristrutturazione urbanistica

con riferimento all'art.31 lettera e) legge n.457/78 dovrà ammettersi soltanto per le aree di recente impianto, con esclusione di impianti o parti di essi, aventi valore storico-artistico ed ambientale-paesistico nonché di quelli di cui al punto 3 dell'art. 1 della legge n.1497/39.

5b. QUADRO NORMATIVO DI RIFERIMENTO – PIANO REGOLATORE GENERALE





PIANO REGOLATORE GENERALE (approvato il 23/01/2002)

L'area oggetto dell'intervento è inquadrato urbanisticamente parte in zona industriale **"D2-industriale di Riconversione"** e parte in zona **"L-Fascia Litoranea inedificata",** sub zone **"L1 e L2".**

Art. 5 - Uso degli immobili e cambio della destinazione d'uso.

Per il patrimonio edilizio esistente, sono individuate le seguenti destinazioni d'uso:
a) Residenziale: [.....] c)**Diverse da quelle residenziali o produttive:** [.....]

b) Produttiva: consiste, anche con riferimento all'art. 27 della L. 22.10.1971, n. 865, nell'utilizzazione dell'immobile a fini industriali, artigianali, commerciali, turistici (alberghi, pensioni, motels) e ricettivi anche per l'accoglienza sociale (case albergo per anziani, studenti, stranieri, ecc.) e sanitaria (case di cura e di riabilitazione). In tale destinazione s'intendono compresi anche gli immobili destinati ad offrire servizi in genere, compresi quelli del settore terziario e del tempo libero, dietro corrispettivo nell'ambito di attività economicamente remunerative. Nell'uso produttivo, salva esplicita previsione, non sono ammesse lavorazioni inquinanti e/o rumorose oltre la soglia di normale tollerabilità consentita all'interno di insediamenti residenziali.

Non è ammesso il cambio dalle destinazioni di cui alle lettere b) e c) del presente articolo a quelle residenziali di cui alla lettera a).
In tutte le zone omogenee, con le limitazioni di cui ai successivi commi 7 e 8, è consentito – per intervento diretto, se per singole unità immobiliari – il cambio dalle destinazioni di cui alla lett. a) a quelle di cui alla lett. b) e c) ovvero quello dalle destinazioni di cui alla lett. b) a quelle di cui alla lett. c) e viceversa.
Il cambio di destinazione d'uso degli immobili è finalizzato anche al diradamento funzionale connesso alle esigenze di sicurezza e alla valorizzazione dei caratteri paesaggistici e del patrimonio culturale di Pozzuoli.
Esso avviene nei limiti delle quantità specificate nell'allegato A alle presenti Norme. Dette quantità vengono sottoposte a verifica e controllo da parte dell'Amministrazione Comunale attraverso il P.G.A. e i P.P.A.Gli interventi di cui ai precedenti comma che interessino manufatti archeologici e/o di valore storico - artistico devono essere realizzati previo parere delle competenti Soprintendenze.
In via generale e fatte salve specifiche previsioni normative di Zona e degli eventuali Piani di Settore, il cambio di destinazione dall'uso residenziale a quelli previsti ai precedenti punti b) e c) del presente articolo, è consentito, con intervento diretto, nelle zone territoriali omogenee B nel rispetto delle quantità previste nell'Allegato A, con il ricorso:
a) alle opere previste nell'art. 73, punto 5
b) all'incremento volumetrico nella misura stabilita nel successivo art. 6, comma 6, dove tale incremento non risulti in contrasto con il P.T.P.
Nelle zone A2, B1, B1r, B2, B2r il cambio di destinazione d'uso mediante intervento diretto è disciplinato dal successivo art. 6, comma 11, lett. b) solo se le citate zone omogenee non ricadono in zona P.I. o P.I.R. del P.T.P.
Per quanto non specificato nel presente articolo valgono le norme del successivo art. 52 (subzona G1).
Tale modifica è assoggettata ad apposita Concessione Edilizia. E' fatto, in ogni caso, obbligo di trascrizione del cambio di destinazione d'uso presso la Conservatoria dei Registri Immobiliari e presso il Catasto.
Fino al conseguimento delle quantità previste nella tabella allegata alle presenti Norme, il rilascio delle relative concessioni edilizie avviene progressivamente, secondo la cronologia delle istanze, nel rispetto delle normative vigenti e del successivo art.11.

Art. 32 - Zona D2. Industriale di riconversione

E' costituita dalla fascia costiera industriale-produttiva, occupata dalla SOFER, dalla Pirelli Cavi e dalla Sud Cantieri.
E' destinata alla riconversione produttiva, mediante la progressiva sostituzione delle produzioni attuali con altre collegate o complementari al parco scientifico e tecnologico (Zona D3), nei settori della ricerca di base e applicata, dei servizi alle imprese, delle produzioni industriali avanzate e ad elevato livello tecnologico nonchè alle altre attività specificate nell'art. 15 delle Norme di Attuazione del Piano Paesistico.
In caso di dismissione parziale o totale degli impianti esistenti, l'Amministrazione Comunale procederà alla formazione di idoneo strumento urbanistico attuativo per la riorganizzazione territoriale della zona D2, da attuarsi mediante ristrutturazione urbanistica finalizzata anche alla suddetta riconversione produttiva.

Tale strumento urbanistico attuativo dovrà prevedere anche i seguenti parametri:

- riduzione minima dei volumi preesistenti del 30%;
- arretramento minimo degli interventi edilizi dalla linea di costa: mt. 80 per la destinazione della fascia litoranea a Parco Urbano Attrezzato per il tempo libero (chioschi, bar, campi da gioco), la balneazione, le attrezzature pubbliche di cui all'art. 5 punto 1) del D.I. n° 1444/68 (parcheggi, verde attrezzato) VV.FF., ambulatori e a servizi consortili di tipo sociale e professionale per gli addetti - locali per la formazione, assemblee, mense, sedi sindacali; con i seguenti indici e parametri:
- It= mc/mq 1; If=mc/mq 1,5; Uf= mq/mq 0,6; Rcf= mq/mq 0,20; Hmax= mt 7
- parcheggio interno di lotto: mq 0,8 per ogni mq di superficie coperta.

Il P.P.E. potrà prevedere la realizzazione di volumi interrati destinati a parcheggi e altri servizi connessi all'attività produttiva.
E' consentito l'intervento diretto, per singole unità immobiliari, mediante le opere di cui al precedente art. 2, 3° comma, punti 1, 2, 3, 4 e 5 esclusivamente per gli impianti attivi alla data di adozione del presente Piano.

Strumenti esecutivi:
P.I.P. e/o P.R.U.; P.P.E.

Art. 55 - Zona L. Fascia litoranea inedificata.

E' costituita dalle subzone L1, costa sabbiosa balneabile; L2, fascia dei servizi stagionali annessi alla zona L1; L3, costa sabbiosa tutelata; L4, costa scoscesa e a scogli.

La subzona L1 è costituita dalla spiaggia di Licola, dall'agglomerato edilizio al confine di Giugliano (zona B8) alla foce nuova di Licola; dalla spiaggia di Lucrino dal Lido Giardino ad Arco Felice; dalla spiaggia a sud del M.te Ruspino a valle di via Napoli.

Destinazioni d' uso:
balneazione con le seguenti intensità d'uso:
- per gli arenili di profondità superiore a 50 ml 6 bagnanti/ml
- per gli arenili di profondità compresa tra 15 e 50 ml 4 bagnanti/ml;
- per gli arenili di profondità inferiore a 15 ml 2 bagnanti/ml.

Ai valori suddetti vanno proporzionati il numero delle cabine e degli spogliatoi.

Interventi:
Le cabine e gli spogliatoi degli stabilimenti balneari devono essere realizzati in esecuzione di progetti-tipo redatti o approvati dall'Amministrazione Comunale d'intesa con l'Autorità Marittima concedente e nel rispetto delle competenze della Regione. Tali progetti devono prevedere l'uso di sistemi smontabili e di materiali compatibili, per caratteristiche e colori, con le finalità di tutela paesistica e ambientale.

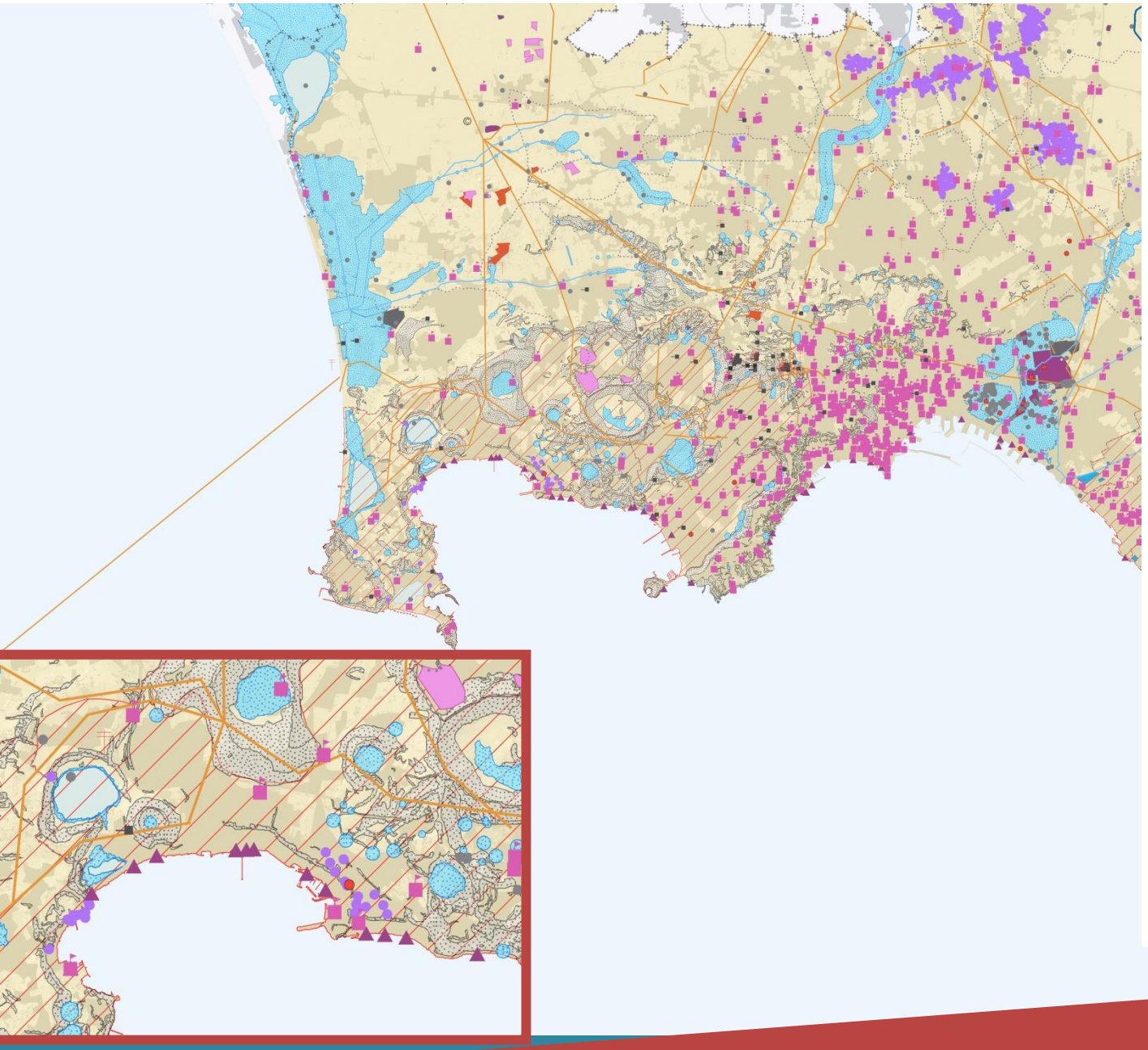
La subzona L2 è costituita dalla fascia costiera di Licola compresa tra la spiaggia e il bosco litoraneo.

Destinazioni d'uso:
servizi stagionali complementari agli stabilimenti balneari: strutture smontabili per bar, ristorazione, locali per il divertimento, spettacoli all'aperto, parchi gioco. Parcheggi e verde attrezzato.

Interventi:
bonifica ed eliminazione dei detrattori ambientali quali piste asfaltate, cartelloni e insegne non idonei in relazione al valore ambientale dell'area.
Per dette subzone è consentito, per singole unità immobiliari, l'intervento diretto per le opere di cui al precedente art. 2, 3° comma, punto 1. *Strumenti esecutivi*: P. P. E. ovvero P.E.C.
[.....]

5c. QUADRO NORMATIVO DI RIFERIMENTO – PIANO TERRITORIALE DI COORDINAMENTO DELLA CITTÀ METROPOLITANA DI NAPOLI

TAV A.05. SORGENTI DI RISCHIO AMBIENTALE (tavola di analisi)



CONFINI AMMINISTRATIVI

PROVINCIALI

COMUNALI

SORGENTI ANTROPICHE DI RISCHIO AMBIENTALE

IMPIANTI RADIOTELEVISIVI

IMPIANTI RADIO

STAZIONI RADIO BASE

SCARICHI A MARE

SITI POTENZIALMENTE INQUINATI

SITI CONTAMINATI

CAVITÀ SOTTERRANEE

ELETTRODOTTI AT

INDUSTRIE A RISCHIO DI INCIDENTE RILEVANTE

AREE DISMESSE

DISCARICHE

CAVE

DEPURATORI CONSORTILI

IMPIANTI TRATTAMENTO RIFIUTI

IMPIANTO CDR

TERMOVALORIZZATORE

SORGENTI NATURALI DI RISCHIO AMBIENTALE

SINTESI DELLA PERICOLOSITÀ FRANA (AGGIORNAMENTO 2015)

SINTESI DELLA PERICOLOSITÀ IDRAULICA (AGGIORNAMENTO 2015)

RISCHIO EROSIONE COSTE

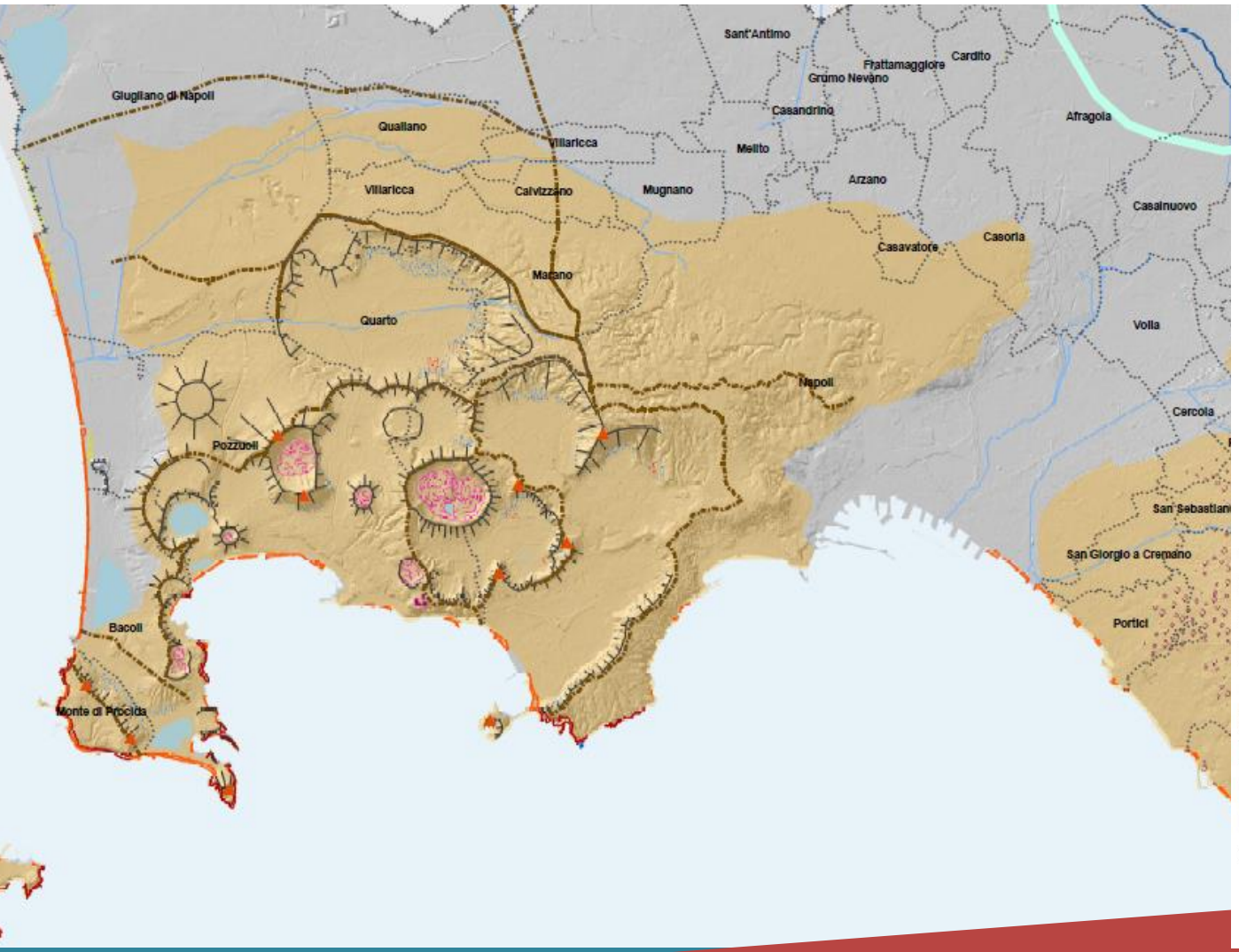
RISCHIO VULCANICO - ZONA ROSSA

CLASSIFICAZIONE SISMICA

CLASSE 2

CLASSE 3

I.01.0 MACROAREE DI INTERESSE NATURALISTICO



AREE E COMPONENTI DI INTERESSE NATURALISTICO

ART. 29 MACROAREE DI INTERESSE NATURALISTICO *

COMPLESSI VULCANICI

LIMITI AMMINISTRATIVI

LIMITI PROVINCIALI

LIMITI COMUNALI

AREE E COMPONENTI DI INTERESSE NATURALISTICO

ART. 29 MACROAREE DI INTERESSE NATURALISTICO *

COMPLESSI VULCANICI

AREE MONTANE

AREA DELLA FASCIA COSTIERA: LIMITE ORIENTALE

ART. 30 AREE VULCANICHE: ELEMENTI MORFOLOGICI

CONI VULCANICI

BOCCHE AFFIORANTI

BOCCHE SEPOLTE

FRATTURE AFFIORANTI

FRATTURE SEPOLTE

ORLI DI CRATERE E DI VERSANTE

ORLI SEPOLTI

POGGI, DUOMI E CUPOLE LAVICHE

CRINALI INTERCRATERICI DEL VESUVIO

VALLI INTERCRATERICHE DEL VESUVIO

LAVE DEL VEUSVIO

FONDO CRATERICO

ART. 31 AREE MONTANE: ELEMENTI MORFOLOGICI

VETTE

CRINALI

CONOIDI

FALDA DETRITICHE

SPIANATE SOMMITALI

ART. 32 AREE DELLA FASCIA COSTIERA: ELEMENTI MORFOLOGICI

ISOLOTTI E SCOGLI

FALESIE

SPIAGGE

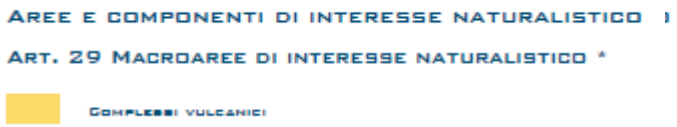
COMPLESSI DUNARI

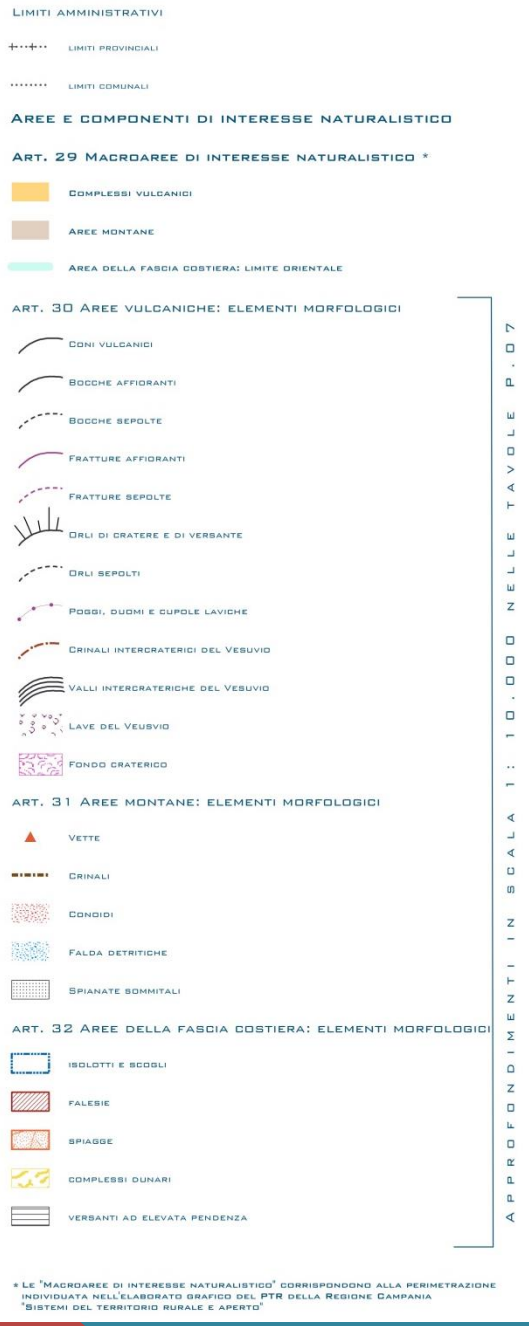
VERSANTI AD ELEVATA PENDENZA

APPROFONDIMENTI IN SCALA 1:10.000 NELLE TAVOLE P.07

* LE "MACROAREE DI INTERESSE NATURALISTICO" CORRISPONDONO ALLA PERIMETRAZIONE INDIVIDUATA NELL'ELABORATO GRAFICO DEL PTR DELLA REGIONE CAMPANIA "SISTEMI DEL TERRITORIO RURALE E APERTO"

I.01.0 MACROAREE DI INTERESSE NATURALISTICO





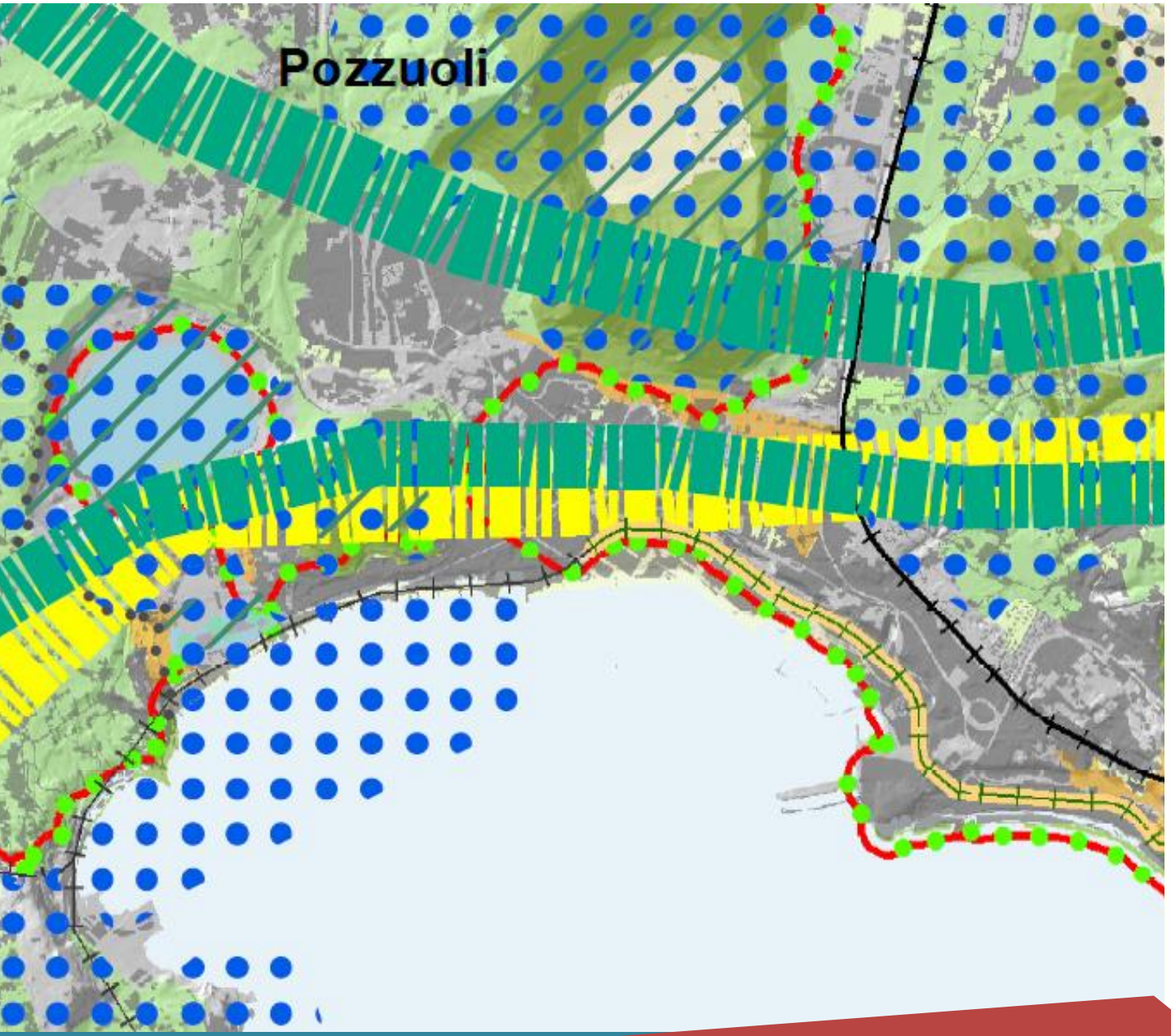
Articolo 29 – Complessi vulcanici, aree montane, aree della fascia costiera

1. Complessi vulcanici, aree montane, aree della fascia costiera vanno considerate macroaree all'interno delle quali si articolano delimitazioni differenziate come aree ad elevata naturalità, aree agricole, insediamenti, etc. e sono rappresentate nella tavola I.01.0 – Macroaree di interesse naturalistico**.**

2. Nelle macroaree si evidenziano altresì alcuni elementi paesaggistici come i crinali, le conoidi, le forme vulcaniche ecc., rappresentati nelle tavole P.07 e sottoposti a specifiche norme.

3. Le macroaree di cui al presente articolo corrispondono alla perimetrazione individuata nell' elaborato grafico del PTR "Sistemi del territorio rurale aperto"

I02-0 - COMPONENTI DELLA RETE ECOLOGICA PROVINCIALE



LEGENDA

LIMITI AMMINISTRATIVI

LIMITI PROVINCIALI

LIMITI COMUNALI

COMPONENTI DELLA RETE ECOLOGICA PROVINCIALE (REP)

INDICAZIONE DI MASSIMA DEI CORRIDOI ECOLOGICI

CORRIDOI PRIMARI

TRATTI DI CORRIDOI PRIMARI IN ALTRE PROVINCE

CORRIDOI SECONDARI

TRATTI DI CORRIDOI SECONDARI IN ALTRE PROVINCE

RETE ECOLOGICA REGIONALE (RER)

INDICAZIONE DEI CORRIDOI ECOLOGICI REGIONALI

NODI ECCELLENTI DELLA REP

AREE PROTETTE: PARCHI, RISERVE E LORO AMPLIAMENTI, AREE PARCO

SITI DELLA RETE NATURA 2000 - SIC E ZPS

AREE STRUTTURALI DELLA REP

AREE AD ELEVATA NATURALITÀ

AREE AGRICOLE

AREE AGRICOLE PERIURBANE (ART. 48)

AREE DI RECUPERO E RIQUALIFICAZIONE PAESAGGISTICA

LAGHI, BACINI E CORSI D'ACQUA E RELATIVE ZONE DI TUTELA

AREE VERDI E SPAZI APERTI PRESENTI NEI TESSUTI URBANI

PISTE CICLABILI

PISTE CICLABILI

BARRIERE INFRASTRUTTURALI

RETE FERROVIARIA

AV/AC

RFI TRENITALIA

RFI - ALIFANA

TRENI LOCALI

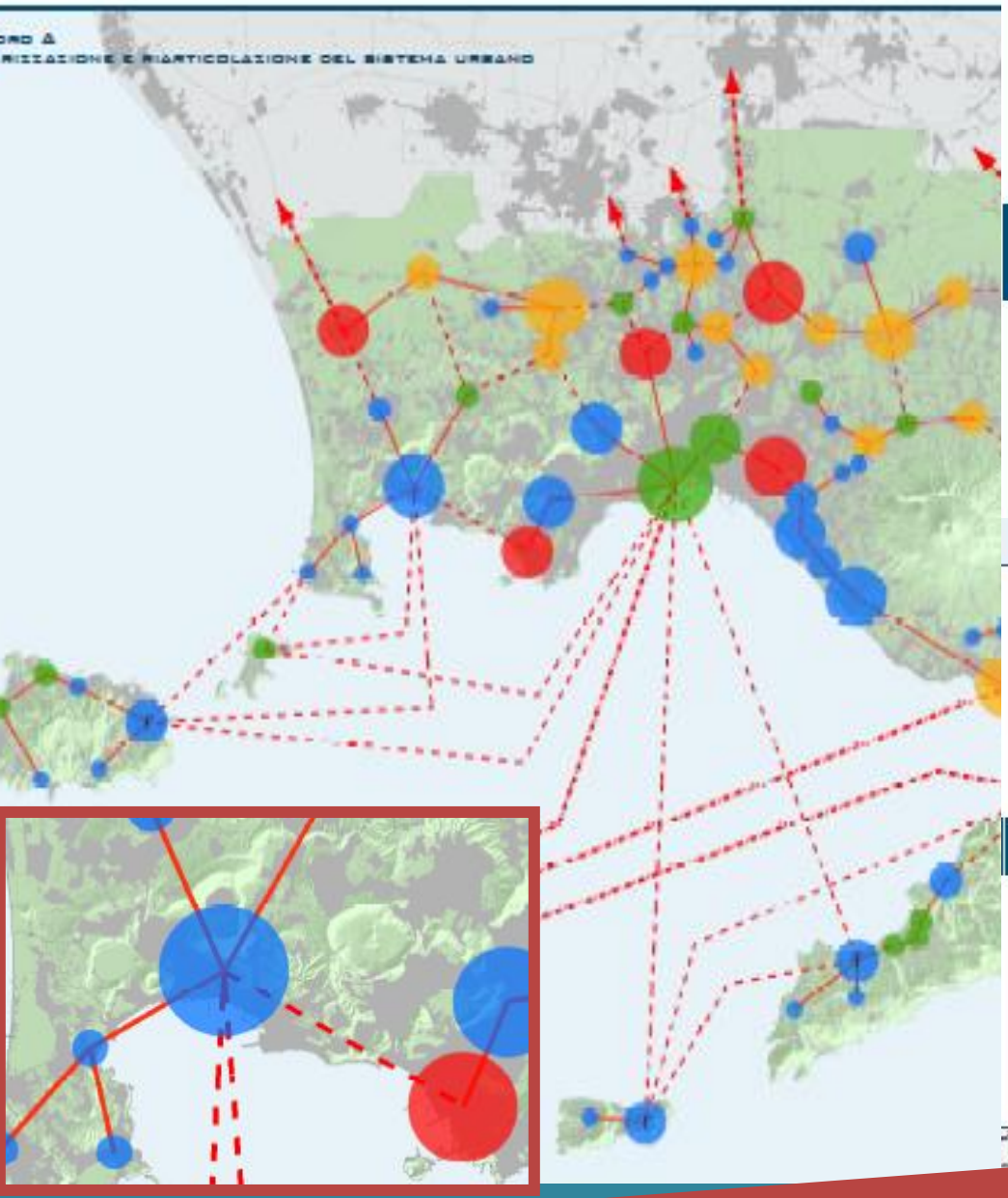
TRENI LOCALI IN PROGETTO

TRENI LOCALI IN COSTRUZIONE

RETE STRADALE

AUTOSTRADE

STRADE STATALI



Sintesi azioni strategiche nei progetti integrati

A. valorizzazione e riarticolazione del sistema urbano, in forme policentriche e reticolari atte a migliorare l'efficienza e l'efficacia delle città in quanto motori di sviluppo sostenibile, e da promuovere la competitività e la qualità diffusa del territorio provinciale;

Nuclei di nuovo insediamento per rilocalizzazione
Città giardino Domizia (con prolungamento Ferrovia cumana) (con revisione critica Pit 11)
Città Nolana (con rinforzo ferrovia per Avellino)

Rinforzo reti di centralità
Sistema pedevesuviano nord Sistema Casalnuovo Scisciano Poggiomarino
centralità esistenti Napoli, Pozzuoli, Castellammarr, Torre Ann, Portici, Torre Gr, Nola, Giugliano e, in misura minore, Pomigliano o, Afragola, Casoria e Frattamaggiore.
Episodi di centralità commerciali e terziarie progettate o in via di realizzazione: CIS, Rione terra Pozzuoli, Bagnoli, Mostra d'oltremare, Polo pediatrico Acerra, Città del libro Casoria, cittadella scolastica Pomigliano

Densificazioni
Pomigliano Scisciano Nord di Nola- Palma Campania, Poggiomarino, Striano

Diminuzione delle pressioni lungo la costa vesuviana e a Napoli

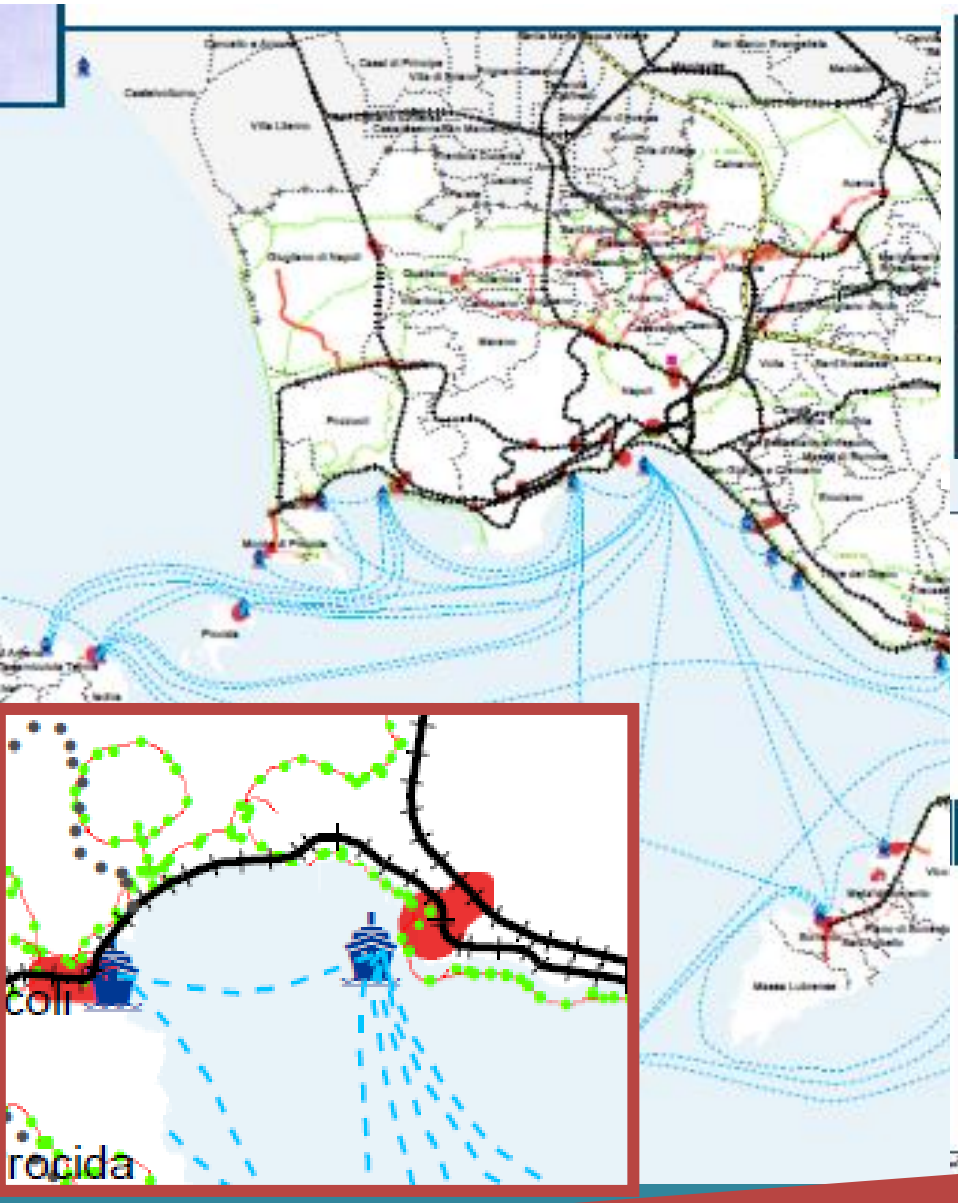
1.Le strategie di maggiore rilevanza da perseguire nei piani e programmi settoriali e locali per l'attuazione degli obbiettivi di cui ai punti d), e), e g) del comma 6 dell'articolo 1 delle presenti norme sono:

a) il rafforzamento degli assi delle piane settentrionali ed orientali della provincia, nella fascia da Giugliano a Nola e da Nola a Castellammare, con il potenziamento delle centralità e con interventi di riqualificazione ambientale e di salvaguardia delle aree inedificate intercluse nel continuum urbanizzato dell'area settentrionale;

b) il consolidamento delle centralità esistenti, sia per la ripresa del ruolo di riferimento urbano di questi centri nel panorama provinciale, sia per la difesa e la valorizzazione di risorse urbane e produttive pregiate che hanno già un ruolo rilevante nella caratterizzazione economico-produttiva ed insediativa, lungo l'arco costiero, da Pozzuoli a Castellammare di Stabia;

c) il riordino delle connessioni tra i sistemi costieri e delle piane e il capoluogo attraverso il potenziamento dei nodi di Bagnoli, Scampia e Napoli est, nei quali gli interventi (in parte già in atto o programmati), mirano a costituire centri con ruolo di "cerniere territoriali" tra il capoluogo e il resto del territorio provinciale;

[...]



C) **sviluppo, riorganizzazione e qualificazione della mobilità** e dei trasporti pubblici in chiave intermodale, al fine di assecondare la riarticolazione urbana di cui al punto A, di ridurre le difficoltà d'accesso ai servizi e alle risorse e di ridurre l'impatto ambientale del traffico e delle infrastrutture;

Completamento o potenziamento ferrovie minori
Cumana verso nord, Cancello-Castellammare

Potenziamento reti corte
Giuliano- Fattamaggiore-

Integrazione Alta velocità reti su ferrolocali
Stazione Tav di Afragola, stazione Tav di Striano, ed in prossimità dei principali nodi intermodali


QUADRO C
SVILUPPO, RIORGANIZZAZIONE E QUALIFICAZIONE DELLA MOBILITÀ
SISTEMA DELLA MOBILITÀ
AUTOSTRADE, TANGENZIALI E ASSI
VIABILITÀ PRIMARIA
RETE DELLE FERROVIE
LINEA AV/AC
LINEA FERRATA
VIE DEL MARE
LINEE DI COLLEGAMENTO MARITTIMO
PORTI E APPRODI
INTERVENTI SUL SISTEMA DI MOBILITÀ
STRADE IPOTESI
TRAM PROVINCIALE
ITINERARI CICLOPEDONALI
NODI INTERMODALI

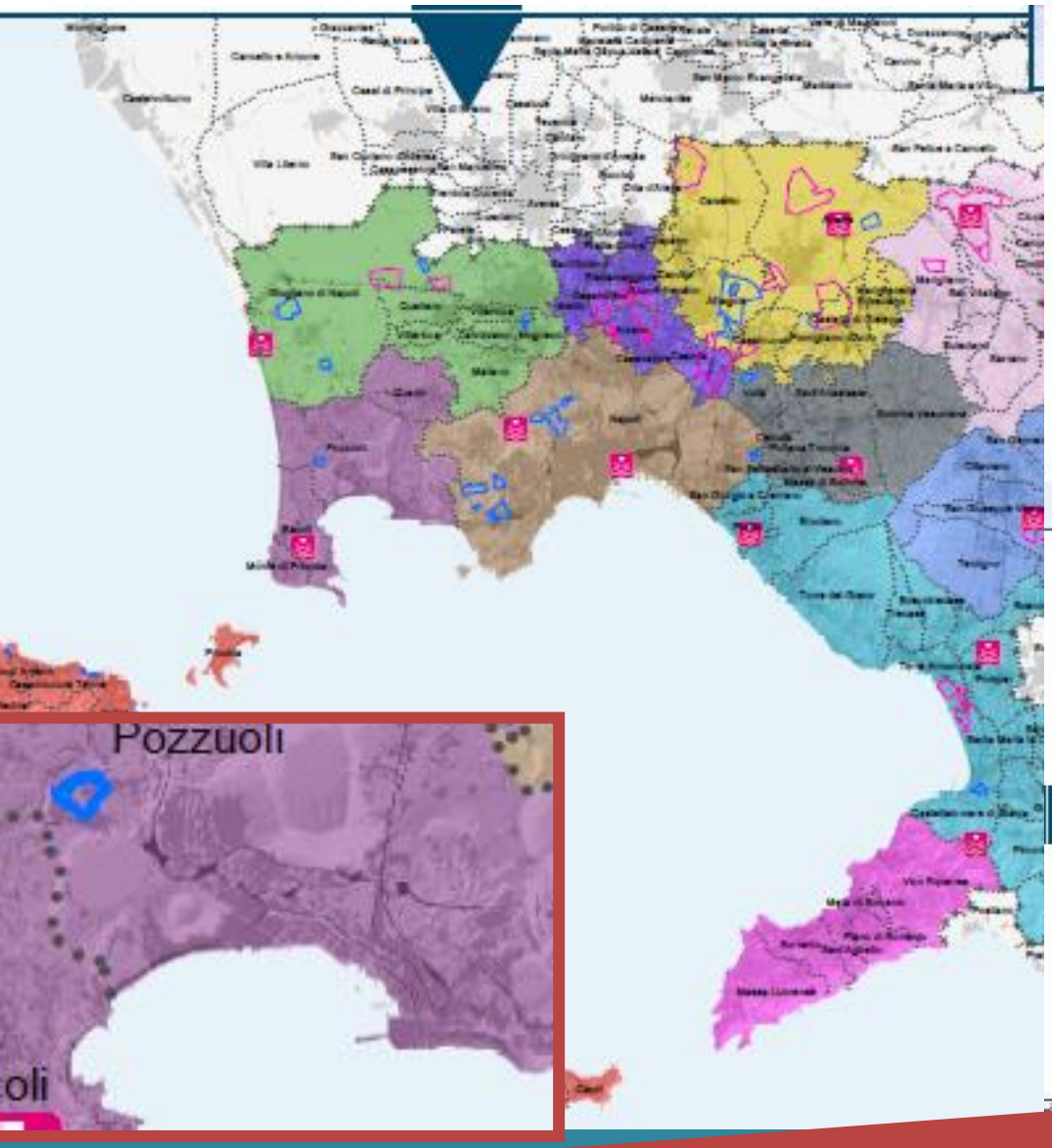
P02-0 - QUADRO STRATEGICO – Quadro C – art. 13

1. Le strategie di maggiore rilevanza da perseguire nei piani e programmi settoriali e locali per l'attuazione degli obbiettivi di cui ai punti h) e i) del comma 6 dell'articolo 1 delle presenti norme si riassumono nel completamento della rete disegnata dalle opere di infrastrutturazione esistenti e previste nel PTR, con particolare attenzione:
a) al potenziamento del sistema del trasporto pubblico in particolare su ferro,
b) al potenziamento delle direttrici di riequlilibrio rispetto all'attuale scenario prevalentemente radiocentrico sul capoluogo, rinforzando le relazioni tra territori vicini ma oggi poco connessi,
c) alla razionalizzazione del sistema logistico e delle relative infrastrutture prevalentemente dedicate al traffico merci,
d) alla integrazione delle infrastrutture per il traffico di transito con quelle per la accessibilità ai servizi da parte dei residenti e alle località turistiche da parte dei visitatori.

2. Le linee di azione operative, con soluzioni progettuali in gran parte condivise con il PTR e mirate a rispondere con costi e tempi "ragionevoli e sostenibili" alle esigenze di mobilità di un'importante quota di abitanti, si riassumono in:
a) potenziamento della direttrice flegrea-domizia, attraverso il prolungamento della linea ferroviaria della circumflegrea dal nodo di Quarto (interscambio con linea FS Villa Literno-Salerno), a servizio degli insediamenti di Monteruscello e di Varcaturo e delle aree per le quali si ipotizza una densificazione abitativa, e delle risorse ambientali ed archeologiche della fascia litoranea, del sito di Cuma e del lago Patria;
b) messa in rete dell'area collinare di Napoli con l'area flegrea-domizia e con le isole flegree, attraverso il nuovo nodo intermodale di Cilea, la circumflegrea, il porto di Acquamorta e l'approdo di Torregaveta (da potenziare) per i collegamenti marittimi con le isole. Questo sistema potrebbe garantire una valida alternativa, in termini di tempi di percorrenza e di costi, per i collegamenti tra Ischia e Procida ed un forte bacino "turistico" residenziale (Vomero-Arenella), innescando, tra l'altro, dirette relazioni tra un bacino turistico maturo (Ischia) e un bacino turistico da consolidare (area flegrea), con la presenza di ingenti risorse cultural;
c) valorizzazione della tratta ferroviaria della linea Villa Literno/Napoli, con caratteristiche di metropolitana, tra Bagnoli e l'area Asi di Giugliano, anche come sistema di connessione tra l'area occidentale, con la presenza di attività ad alto contenuto tecnologico (CNR, Rai, Politecnico, Città della scienza, Bagnoli, etc), ed aree potenzialmente caratterizzabili con nuove funzioni produttive, di servizio o ludiche (nodo intermodale di Quarto, cave dismesse, nuova "città della produzione" nell'area Asi di Giugliano);
d) riorganizzazione del sistema della mobilità dell'area nord di Napoli, articolata sul ruolo di cerniera territoriale di Scampia, con la previsione di un sistema tramviario al servizio degli insediamenti locali e di connessione tra le linee dell'Alifana e del metro collinare (nodo Scampia-Piscinola); della FS Aversa-Napoli e di adduzione alla linea dell'AV nella stazione di porta di Afragola;
e) consolidamento della direttrice nolana, da Pomigliano d'Arco a Nola e Casamarciano, attraverso il potenziamento della tratta della Circumvesuviana Nola/Baiano al servizio degli insediamenti e dei poli produttivi esistenti (Area industriale di Pomigliano d'Arco, Cis di Nola, "Vulcano Buono") e a supporto della densificazione insediativa ipotizzata, con la caratterizzazione di area intermodale del nodo di Marigliano, (connessione con la tratta Torre Annunziata/San Giuseppe Vesuviano/ Nola);

f) utilizzo della tratta ferroviaria da Torre Annunziata a Nola, (oggi sottoutilizzata), per la costruzione di un sistema logistico integrato (Porto commerciale di Torre Annunziata, Distretto industriale di San Giuseppe Vesuviano, interporto di Nola), a supporto della mobilità locale (con caratteristiche ferrotranviarie in ambito urbano) ed in connessione (nodo Ottaviano circumvesuviana) con la stazione dell'AC di Poggiomarino-Striano;
g) riconversione della linea FS costiera nella tratta vesuviana, con interventi di compatibilizzazione ambientale e la previsione di sistemi ettometrici trasversali di connessione con le aree a più alta densità abitativa, con l'area del Parco del Vesuvio, con le vie del mare;
h) riorganizzazione della mobilità nell'area torrese-pompeiana-stabiese (territorio cerniera tra la direttrice vesuviana costiera, le due direttrici interne verso Marigliano e verso la piana nocerina-sarnese) a servizio degli insediamenti e delle attività esistenti e dei nuovi flussi turistici derivanti dalla funzione di polo crocieristico di Castellammare di Stabia, dal rilancio del Polo termale e dalla riorganizzazione del sistema turistico pompeiano. Le ipotesi progettuali mirano alla realizzazione di un sistema integrato di trasporti con la trasformazione della tratta ferroviaria Torre Annunziata/Gragnano in ferrotranvia, con la realizzazione di sistemi ettometrici di connessione e di nodi intermodali;
i) razionalizzazione del sistema della mobilità della penisola sorrentina con il potenziamento del servizio per la tratta della Circumvesuviana tra Meta e Sorrento, la realizzazione di sistemi ettometrici di connessione tra marine (vie del mare) e borghi; inoltre, al fine di ridurre il notevole numero di bus turistici circolanti sulla rete stradale locale, occorre verificare l'ipotesi della connessione della tratta San Giorgio a Cremano/Volla con l'aereoporto di Capodichino, in modo da realizzare una diretta connessione tra la struttura aeroportuale e le aree turistiche vesuviana e sorrentina;
j) realizzazione di una rete ciclabile provinciale che consenta da una parte la fruibilità della linea di costa e si prolunghi in modo da connettere i siti archeologici e, in prospettiva, coinvolgere gran parte degli insediamenti della piana napoletana, nel breve periodo con reti corte (da Castellammare a Torre Annunziata, da Nola a Pomigliano, da Giugliano a Napoli, o in aree protette come i Campi flegrei, o i Regi Lagni) e progressivamente con le reti lunghe di connessione tra i diversi ambiti di pianura. Scelta prioritaria delle aree raggiungibili ciclopedonalmente dai nodi intermodali e in particolare dalle stazioni ferroviarie, per localizzare investimenti per la riqualificazione urbana o per il completamento e la densificazione residenziale, in modo da consentire un più diretto vantaggio all'utilizzo dei trasporti pubblici agli abitanti.

P02-0 - QUADRO STRATEGICO – QUADRO D Rafforzamento dei sistemi territoriali locali

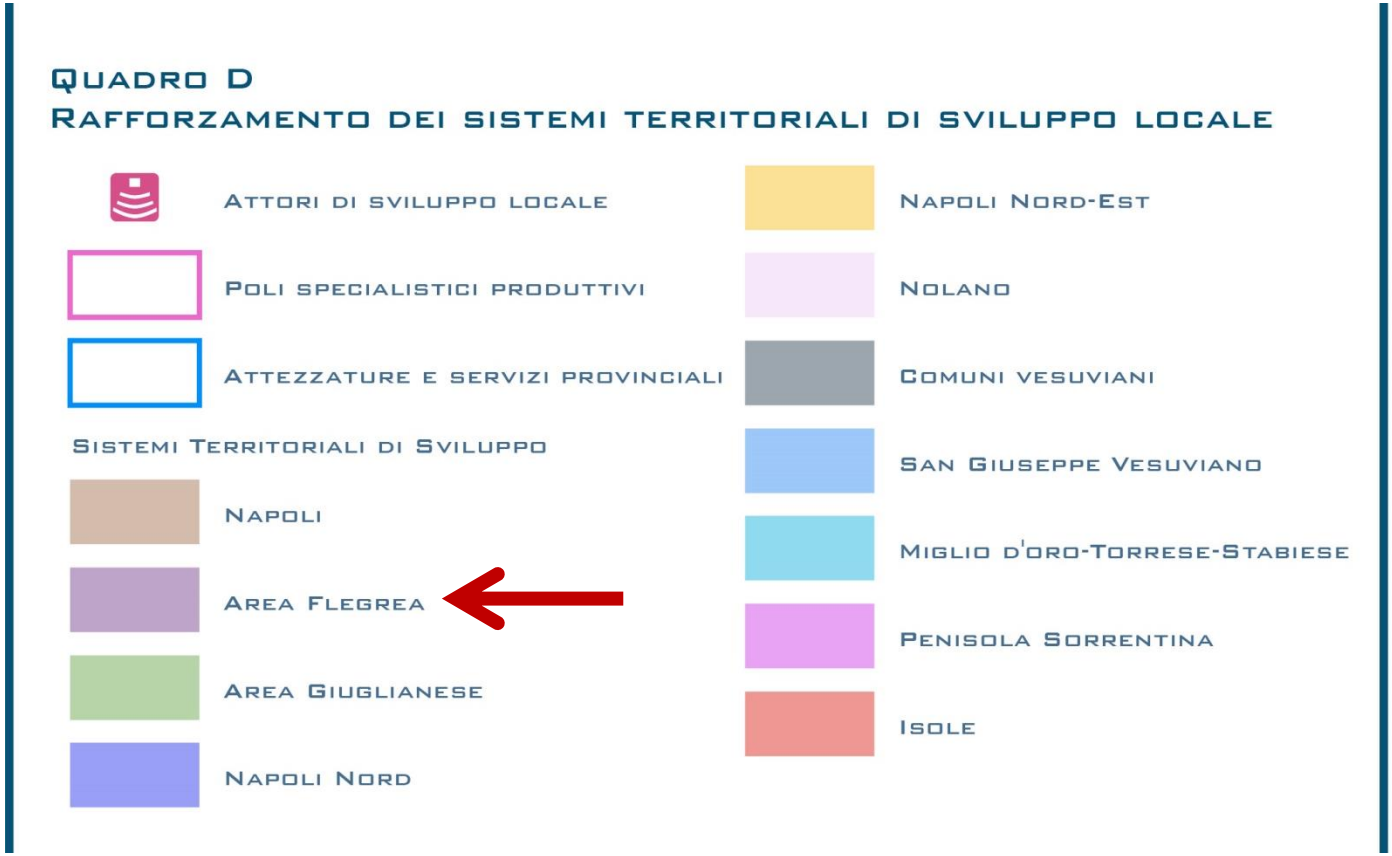


D. rafforzamento dei sistemi locali territoriali della loro capacità di auto-organizzarsi e di affacciarsi sui circuiti sovralocali di scambio e produzione, concorrendo nel contempo ad assicurare il mantenimento e la riqualificazione del patrimonio ambientale, in particolare nello spazio rurale

Agricoltura qualificata
Colline napoli-giuliano, nord vesuvio Penisola sorrentina (pit 9)

Filiere tessile manifatturero integrate
Nolano (pit 10) + S.Giuseppe vesuviano (Pit 6)
Città del fare Acerra (pit 7)

Sistemi Turistico costieri
Napoli Sorrento Capri (pit 8 Portualità turistica,da assumere criticamente)
Penisola amalfitana e sorrentina) (pit 13 Termale Castellamare) (pit 15 Isole) (pit 16 Torre Greco polo orafo)
Napoli Ischia Cuma (pit 3 Flegrei) (pit 5 Napoli) (pit 13 termale) (pit 15 Isole)
Porte del parco Vesuvio (Cercola/San Sebastiano, Ercolano, Torre Annunziata, Ottaviano/Somma Vesuviana) (pit 2)


QUADRO D
RAFFORZAMENTO DEI SISTEMI TERRITORIALI DI SVILUPPO LOCALE
ATTORI DI SVILUPPO LOCALE
POLI SPECIALISTICI PRODUTTIVI
ATTEZZATURE E SERVIZI PROVINCIALI
SISTEMI TERRITORIALI DI SVILUPPO
NAPOLI
AREA FLEGREA
AREA GIUGLIANESE
NAPOLI NORD
NAPOLI NORD-EST
NOLANO
COMUNI VESUVIANI
SAN GIUSEPPE VESUVIANO
MIGLIO D'ORO-TORRESE-STABIESE
PENISOLA SORRENTINA
ISOLE

1. Per perseguire nei piani e programmi settoriali e locali l'attuazione degli obbiettivi di cui ai punti c) e f) del comma 6 dell'articolo 1 delle presenti norme si deve concentrare la nuova offerta residenziale solo a margine o entro siti già insediati, preferibilmente prossimi a nodi di accessibilità del trasporto pubblico esistenti o previsti e/o a centralità urbane dotate di servizi con ruolo non solo locale, ai soli fini:
a) di rispondere al fabbisogno abitativo prodotto da dinamiche endogene, come motivatamente dimostrato in occasione dei piani locali,
b) di rispondere al fabbisogno abitativo derivante da "saldi sociali" distribuiti sul territorio per prevenire i rischi catastrofici, contenere gli impatti su fattori ambientali in logoramento (come lungo la fascia costiera) e distribuire meglio la popolazione oggi costretta in alcuni casi in condizioni di sovraffollamento, attraverso interventi concentrati di densificazione in siti predefiniti.

2. La progettazione attuativa degli interventi di densificazione residenziale di cui al comma 1 deve:
a)verificare prioritariamente la possibilità di elevare la densità dei suoli già parzialmente edificati a bassa densità, sia attraverso intensificazioni e completamenti, sia attraverso ristrutturazioni urbanistiche volte a sostituire l'edilizia di bassa qualità, malsana ed insicura e gli aggregati urbani incoerenti e degradati, ad incrementare non solo le volumetrie residenziali e la capacità insediativa complessiva ma anche la dotazione di servizi ed il verde pubblico, recuperando almeno in parte, fabbisogni pregressi. Ove ciò non sia possibile, gli ambiti oggetto di densificazione sono da ricercare all'interno delle zone di espansione recente che presentino un impianto ancora non consolidato con spazi liberi interstiziali; nelle aree perirubane già compromesse da un'edificazione diffusa e disordinata che spesso si estende in continuità tra più centri; nei grandi aggregati suscettibili di un rafforzamento della capacità insediativa e di una riconfigurazione come nuclei urbani;

b) evitare l'interruzione dei corridoi ecologici attualmente attrezzabili. Nei casi di ristrutturazione urbanistica, quando vi siano esigenze di riconnessione della rete ecologica, la riorganizzazione spaziale degli insediamenti dovrà puntare a ripristinare varchi e segmenti della rete;
c) integrarsi con piani di riqualificazione urbanistica ed ambientale e, in particolare, rispettare parametri massimi relativi all'impermeabilizzazione dei suoli (mai oltre il 65 % della superficie territoriale) e paradigmi di sostenibilità dell'architettura (bioclimatico, materiali a basso contenuto energetico, ….) e prevedere un'adeguata offerta di prestazioni urbane in termini di servizi e di attrezzature pubbliche.
3. Nel rispetto dei requisiti identificati, il PTCP individua cinque aree secondo criteri che considerano già le esigenze di salvaguardia del territorio agricolo e di altre componenti territoriali pregiate. In ogni caso la loro progettazione attuativa, sia in programmi operativi sia in sede di PUC singoli o consortili sia in sede di redazione di piani urbanistici esecutivi, deve ulteriormente approfondire ed articolare i rapporti con le aree da salvaguardare. All'interno di dette aree, di seguito specificate, si deve procedere all'individuazione di "ambiti di densificazione residenziale" che, perseguendo l'obbiettivo prioritario di recuperare e rifunzionalizzare il patrimonio edilizio preesistente, siano, altresì, rispondenti ai requisiti indicati:
a) ad occidente, nell'intorno di Varcaturo: i grandi aggregati edilizi ivi esistenti possono trasformarsi, con dotazioni adeguate di servizi e attrezzature e opportune intensificazioni insediative, in entità urbane. In particolare si fa riferimento all'esteso aggregato residenziale di Varcaturo, nell'area occidentale del Giuglianese (area interessata da tendenze di trasformazione non limitate all'edificazione residenziale) ed a un gruppo di aggregati presenti nella fascia interna della costa domitia.
indirizzare i PTCP in funzione di tale domanda residenziale, provvedendo ad attrarla con il decentramento di servizi e posti di lavoro.

b) a nord-ovest, nell'area giuglianese: gli interventi di densificazione, che interessano aree già compromesse da un'urbanizzazione estesa e disordinata con accentuati caratteri di dispersione, si propone di addensare – favorendo anche lo sviluppo in altezza – al fine di recuperare spazi aperti urbani e di verde pubblico ed attrezzature collettive capaci di qualificare i tessuti urbanizzati connettendosi alla più generale strategia di riqualificazione spaziale ed ambientale e di rafforzamento del sistema di centralità urbane, sostenuta dall'adeguamento della rete del trasporto su ferro e volta a tutelare gli spazi agricoli aperti ed a preservare le aree di discontinuità insediativa;
c) lungo la direttrice Pomigliano-Scisciano: questa ipotesi si integra con la proposta di un potenziamento delle centralità territoriali, prefigurando un "progetto" di rafforzamento complessivo della direttrice insediativa, in una logica di integrazione e complementarità interna al sistema (in cui attualmente si distingue il ruolo forte di Pomigliano) e di relazione con l'area settentrionale della provincia e, in particolare, con la nuova centralità del "cuneo verde" collegato con la realizzazione della stazione AV/AC;
d) a nord-est, nel sistema nolano: l'individuazione di aree di possibile densificazione adiacenti ai centri minori si può ricondurre all'organizzazione complessiva del "sistema nolano": caratterizzato attualmente dal polo di Nola e da piccoli centri, con presenza di insediamenti di housing sociale tra un centro e l'altro, il sistema potrebbe essere interessato da interventi di densificazione ed incremento residenziali, sia integrando gli insediamenti di housing sociale, sia densificando le aree parzialmente edificate adiacenti;
e) ad oriente, fra Poggiomarino e Striano: alla nuova centralità di Striano (servizi per l'intermodalità e la logistica, connessi con la stazione AV/AC) può collegarsi un insieme di interventi di riqualificazione, densificazione e rafforzamento degli insediamenti esistenti, preferibilmente con proiezione verso est, per allontanarsi dalle aree a più elevato rischio vulcanico. Ciò anche in relazione alle proposte di potenziamento del servizio delle linee ferroviarie esistenti;

3 *bis* Le suddette aree conterranno una quota di housing sociale secondo le direttive regionali contenute nella Deliberazione n. 572 del 22 luglio 2010 – Approvazione linee guida in materia di edilizia residenziale sociale.

4. Con la individuazione delle aree di densificazione si determina il peso urbanizzativo sostenibile della provincia di Napoli. Le esigenze della popolazione eccedente potranno essere soddisfatte nell'integrazione delle province confinati verso le quali già si indirizza un flusso migratorio dal napoletano. La Regione, come stabilito dal Piano Territoriale Regionale, provvederà ad indirizzare i PTCP in funzione di tale domanda residenziale, provvedendo ad attrarla con il decentramento di servizi e posti di lavoro.

P.03.0 - ORGANIZZAZIONE COMPLESSIVA DEL TERRITORIO

LEGENDA

- LIMITI PROVINCIALI
- LIMITI COMUNALI
- TESSUTO URBANO EXTRAPROVINCIALE

ORGANIZZAZIONE DEL TERRITORIO

- ACQUE SUPERFICIALI
- AREE NATURALI
- AREE AGRICOLE
- AREE STORICHE ED ARCHEOLOGICHE
- INSEDIAMENTI URBANI
- AREE DI INTEGRAZIONE URBANISTICA
- POLI SPECIALISTICI PRODUTTIVI
- AREE E COMPLESSI PER SERVIZI E ATTREZZATURE
- AREE DELLE INFRASTRUTTURE

AREE NATURALI ISTITUZIONALMENTE TUTELATE

- PARCHI E RISERVE DI INTERESSE REGIONALE E NAZIONALE
- AREE PARCO PROVINCIALI
- AMPLIAMENTO DEI PARCHI REGIONALI
- CORSI D'ACQUA

SISTEMA DELLA MOBILITÀ

VIABILITÀ PRIMARIA

- AUTOSTRADE, TANGENZIALI E ASSI
- STRADE URBANE ED EXTRAURBANE PER LA VIABILITÀ PRIMARIA
- SVINCOLI RETE STRADALE PRINCIPALE

RETE DELLE FERROVIE

- LINEA AV/AC
- LINEA 1 BINARIO
- LINEA 2 BINARI
- STAZIONI E FERMATE FERROVIARIE

SISTEMI ETTOMETRICI

- FUNICOLARI, FUNIVIE, ALTRO

VIE DEL MARE

- LINEE DI COLLEGAMENTO MARITTIMO

PORTI

- PORTO INDUSTRIALE E COMMERCIALE DI NAPOLI
- PORTI INDUSTRIALI E COMMERCIALI
- PORTI, PORTICCIOLI E APPRODI

INTERVENTI SUL SISTEMA DELLA MOBILITÀ

- NUOVE STRADE
- ADEGUAMENTO LINEA FERRATA A LINEA FERROTRAMVIARIA
- METROPOLITANA SORRENTINA
- NUOVA LINEA FERRATA
- RADDOPPIO LINEA FERRATA
- NUOVA LINEA FUNICOLARE
- ITINERARI CICLOPEDONALI
- TRAM PROVINCIALE

NODI INTERMODALI

- PIATTAFORMA LOGISTICA
- NODO METROPOLITANO
- NODO LOCALE
- NODI DI INTERSCAMBIO

P.03.0 - ORGANIZZAZIONE COMPLESSIVA DEL TERRITORIO

Art 23 – Riassetto policentrico e reticolare del sistema insediativo

1.Nella prospettiva strategica del riassetto policentrico della provincia, le azioni per nuove "centralità urbane" devono offrire un insieme articolato di opportunità per l'accesso a servizi, risorse, beni ed a percorsi di sviluppo sociale ed economico, all'interno di una logica di inclusione ed equità sociale. Sotto il profilo dell'assetto territoriale, va perseguita un'organizzazione dello spazio caratterizzata dalla compresenza di funzioni diversificate e con elevata capacità di attrazione, legate da relazioni reciproche e con il contesto. La presenza di ulteriori fattori legati ai caratteri fisici dello spazio ed ai relativi processi di formazione e trasformazione (fattori estetici, simbolici, storici), di uso e di identificazione della società locale esaltano il carattere di centralità e/o possono costituirne il nucleo fondante e stabile.

2. La presenza di "polarità" monofunzionali o infrastrutturali va considerata anche in rapporto alla possibilità di promuovere, a partire da essa, processi di integrazione complessa in direzione di effettive centralità.

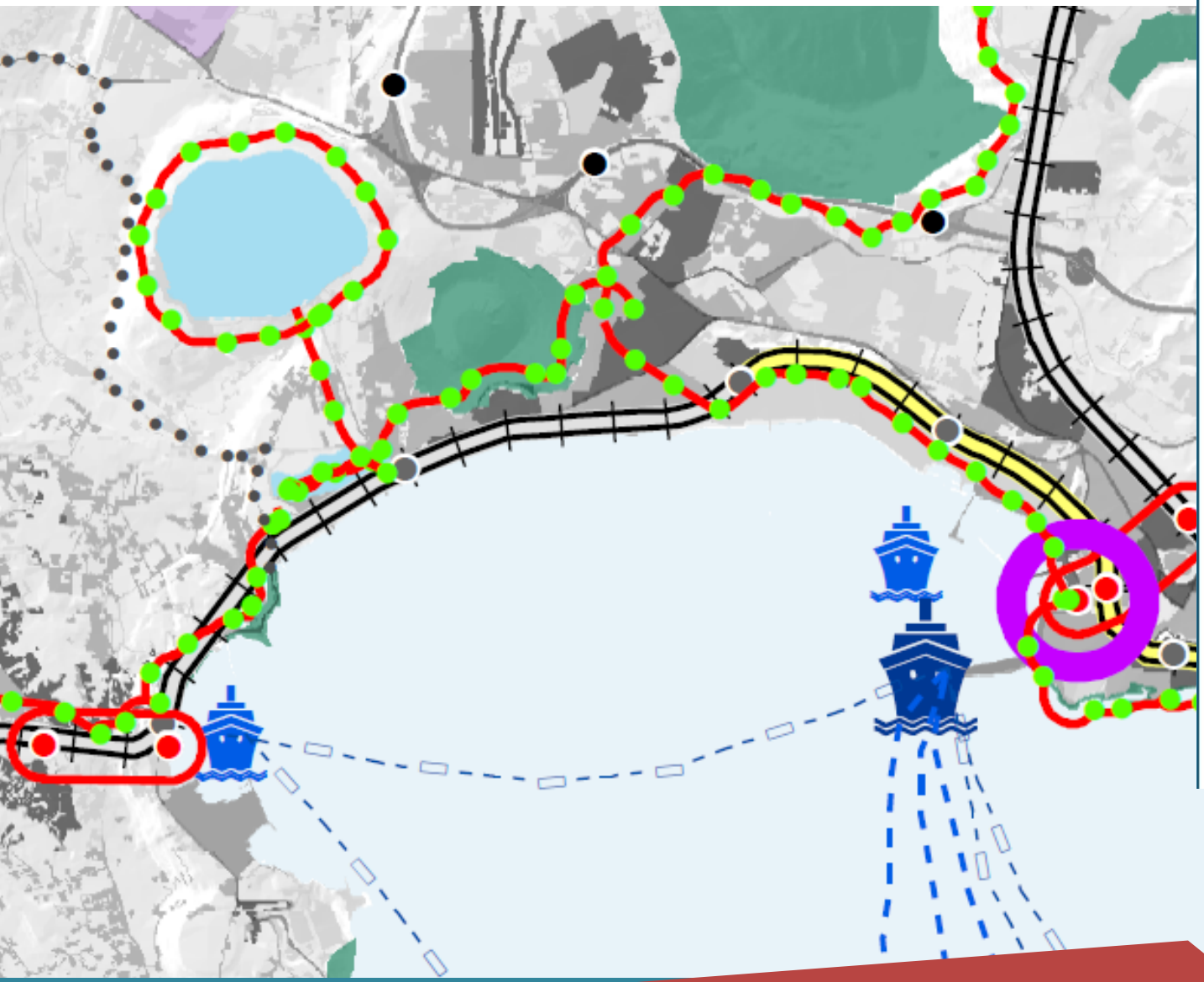
3. Il rafforzamento e l'ampliamento della rete di centralità urbano-territoriali previste nell'ambito della strategia di riorganizzazione policentrica dovrà essere perseguito attraverso il potenziamento delle centralità esistenti, di diverso rango**,** così come indicato nello Schema di riassetto policentrico e reticolare del territorio (Tav. P.03.0).

4. Per le finalità di cui al precedente comma dovrà essere realizzato, in particolare, un forte incremento dell'offerta di servizi di livello superiore che dovrà coinvolgere prioritariamente le aree periferiche già compromesse da un'edificazione disordinata, in una logica di integrazione con la riqualificazione delle stesse aree e di complementarità con il potenziamento delle funzioni urbane dei centri maggiori delle zone urbane consolidate.

5. Indispensabile fattore per il rafforzamento e l'ampliamento della rete di centralità è il potenziamento del trasporto su ferro con l'estensione delle linee esistenti, attraverso le integrazioni programmate e/o proposte.

6. I piani ed i programmi dei Comuni e degli altri enti coinvolti devono mirare alla promozione ed alla realizzazione del :
a) potenziamento dell'ambito di Giugliano al fine di configurarlo come Ambito di centralità regionale, con ruolo di rilievo nelle relazioni sovraprovinciali;
b) potenziamento dell'ambito di Afragola al fine di configurarlo come Ambito di centralità regionale, con ruolo di rilievo nelle relazioni sovraprovinciali, soprattutto in riferimento alla realizzazione della stazione dell'AV/AC;
c) dell'Area parco Nord quale grande centralità intercomunale (il "cuore verde"), fulcro della riorganizzazione insediativa dell'AIL-Area Nord;
d) potenziamento dell'ambito di Nola al fine di configurarlo come Ambito di centralità regionale, con ruolo di rilievo nelle relazioni sovraprovinciali, soprattutto in riferimento alla promozione dell'incremento di servizi pubblici "rari" (in particolare formazione universitaria e ricerca e relativi servizi), all'integrazione funzionale con le attività del CIS, alla valorizzazione del patrimonio storico, archeologico e paesaggistico;
e) di un Ambito di centralità metropolitana, nell'area di Napoli-Scampia, con forte strutturazione e/o specificità funzionale e relazionale;
f) potenziamento di diversi ambiti al fine di configurarli come Ambiti di centralità subprovinciali, con funzioni di tipo urbano (servizi di livello superiore) e/o produttivo relazionate al sistema economico-produttivo principale ed Ambiti di centralità di livello sovracomunale, con funzioni complementari a centralità superiori e relazioni con il contesto locale;
g) potenziamento degli Ambiti di centralità di livello locale esistenti, con ruoli di riferimento per il contesto locale.

P.04.0 - NODI E RETI PER LA CONNETTIVITÀ TERRITORIALE



LEGENDA

LIMITI PROVINCIALI

LIMITI COMUNALI

TESSUTO URBANIZZATO PER DENSITÀ DI POPOLAZIONE

MINORE DI 25 ABITANTI/HA

TRA 25 - 100 ABITANTI/HA

MAGGIORE 100 ABITANTI/HA

TESSUTO URBANO EXTRAPROVINCIALE

ORGANIZZAZIONE DEL TERRITORIO

AREE NATURALI

SUPERFICI D'ACQUA

AREE DI INTEGRAZIONE URBANA

AREE SPECIALISTICHE

AREE INFRASTRUTTURE — AEREOPORTO — GRANDI STAZIONI FERROVIARIE

SISTEMA IDROGRAFICO

CORSI D'ACQUA

VIABILITÀ PRIMARIA

AUTOSTRADE, TANGENZIALI E ASSI

AUTOSTRADE, TANGENZIALI E ASSI DI PROGETTO

STRADE URBANE ED EXTRAURBANE PER LA VIABILITÀ PRIMARIA

STRADE URBANE ED EXTRAURBANE PER LA VIABILITÀ PRIMARIA DI PROGETTO

SVINCOLI RETE STRADALE PRINCIPALE

RETE DELLE FERROVIE

LINEA AV/AC

LINEA 1 BINARIO

LINEE 1 BINARIO DI PROGETTO

LINEA 2 BINARI

LINEA 2 BINARI DI PROGETTO

STAZIONI E FERMATE FERROVIARIE

SISTEMI ETTOMETRICI

FUNICOLARE

FUNIVIA

FUNICOLARE VESUVIO (DI PROGETTO)

TRENO ELETTRICO ERCOLANO-VESUVIO (DI PROGETTO)

VIE DEL MARE

LINEE ALISCAFI

LINEA METRÒ DEL MARE

LINEE TRAGHETTI E ALTRO

PORTI

PORTO INDUSTRIALE E COMMERCIALE DI NAPOLI

PORTI INDUSTRIALI E COMMERCIALI

PORTI E PORTICCIOLI

ALTRI APPRODI

INTERVENTI SUL SISTEMA DI MOBILITÀ

NUOVE STRADE

ADEGUAMENTO DELLA LINEA FERRATA A TRAMVIARIA (METROTRAM)

METROPOLITANA SORRENTINA

NUOVA LINEA CIRCUMFLEGREA-CIRCUMVESUVIANA

RADDOPPIO LINEA CIRCUMFLEGREA

NUOVA LINEA FUNICOLARE

ITINERARI CICLOPEDONALI

TRAM PROVINCIALE

NODI INTERMODALI

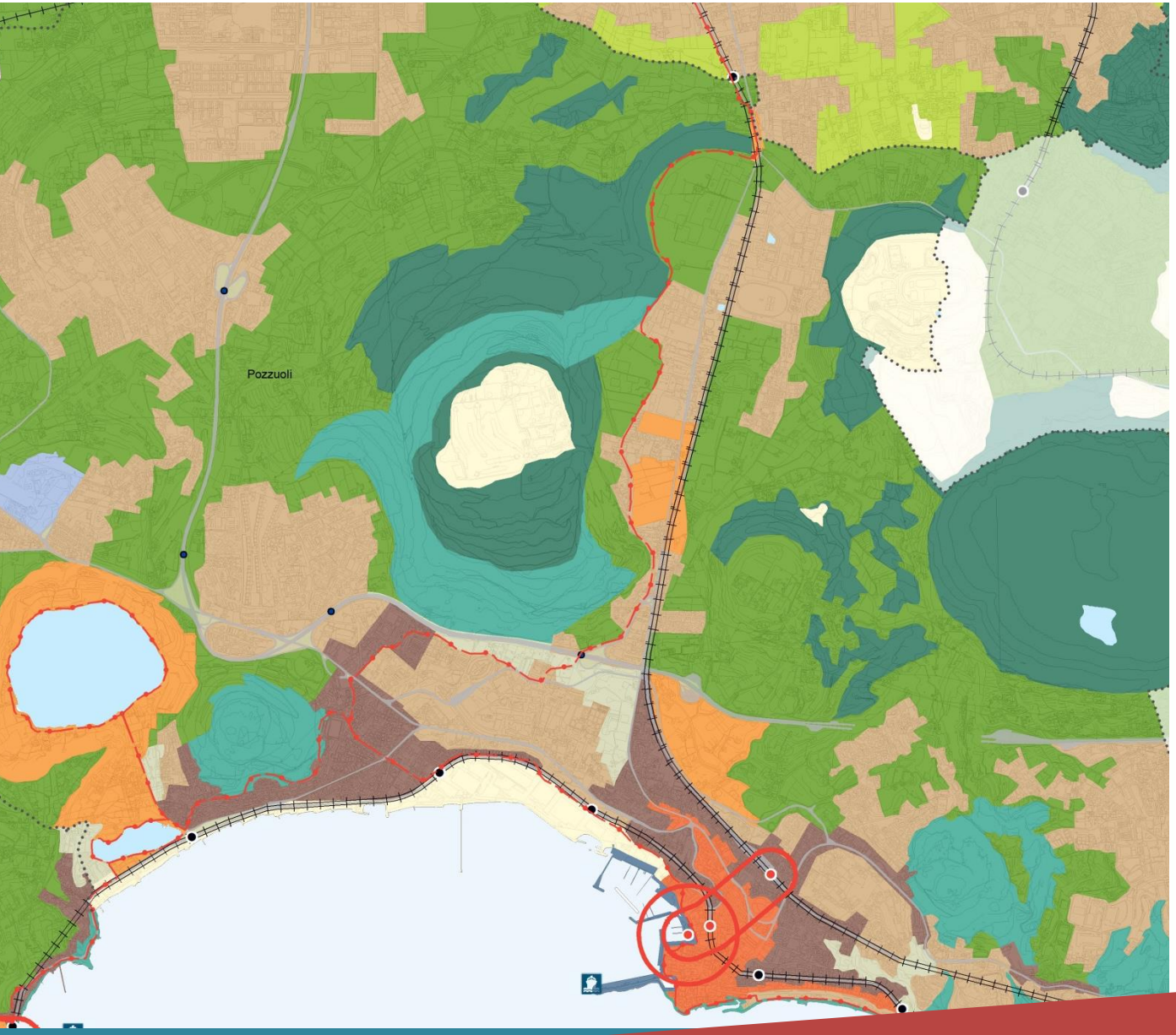
PIATTAFORMA LOGISTICA

NODO METROPOLITANO

NODO LOCALE

NODI DI INTERSCAMBIO

P.06.02 – DISCIPLINA DEL TERRITORIO



Legenda

limiti provinciali

limiti comunali

Aree e componenti di interesse naturalistico

art. 33 Aree ad elevata naturalità

art. 34 Aree boscate

art. 35 Laghi, bacini e corsi d'acqua e relative zone di tutela

Fiume

Regi Lagni

Torrente

Altri corsi d'acqua

Aree e componenti di interesse storico, culturale e paesaggistico

art. 37 Aree ed emergenze archeologiche

art. 38 Centri e nuclei storici

Aree e componenti di interesse rurale

art. 46 Aree agricole di particolare rilevanza agronomica

art. 47 Aree agricole di particolare rilevanza paesaggistica

art. 48 Aree agricole periurbane

art. 49 Aree agricole ordinarie

Aree e componenti di interesse urbano

art. 51 Insediamenti urbani prevalentemente consolidati

art. 52 Aree di consolidamento urbanistico e di riqualificazione ambientale

art. 53 Aree di integrazione urbanistica e di riqualificazione ambientale

art. 55 Aree e complessi per insediamenti produttivi sovracomunali

art. 56 Aree e complessi per servizi e attrezzature pubbliche sovracomunali

art. 57 Impianti tecnologici

Aree di criticità o di degrado

art. 61 Aree di recupero e riqualificazione paesaggistica

Nodi e reti per la connettività territoriale

art. 63 Reti infrastrutturali per la mobilità

a) Sistema dei porti e le vie del mare

Aree portuali

Porti

b) Aereoporto

Area aereoporto

Aereoporto

c) Rete ferroviaria

Linea AV/AC

Linea 1 binario

Linea 2 binari

Nuove Linee ferrate

Raddoppio linea ferrata

Stazioni e Fermate ferroviarie

Adeguamento linea ferrata a linea ferrotramviaria

Tram provinciale

Metropolitana sorrentina

d) Rete stradale primaria

Autostrade, Tangenziali e Assi

Strade urbane ed extraurbane per la viabilità primaria

Nuove strade

Svincoli rete stradale principale

e) Sistemi ettometrici

Funicolare

Funivia

Treno Elettrico

Nuove linee funicolare

f) Nodi intermodali

Nodi intermodali

Interscambi

g) Rete dei principali percorsi ciclopedonali extraurbani

Itinerari ciclopedonali

Art.61 – Aree di recupero e riqualificazione paesaggistica

1. Le aree di recupero e riqualificazione paesaggistica sono costituite da aree significativamente compromesse o degradate da attività antropiche pregresse (quali siti di cave dismesse, cave in attività, discariche, tessuti edilizi degradati in contesti paesaggistici di notevole interesse, insediamenti produttivi dismessi ecc) per le **quali si ritengono necessari interventi di recupero ambientale, orientati al ripristino dello stato originario dei luoghi, o di riqualificazione paesaggistica, tesi alla creazione di nuovi paesaggi compatibili con il contesto ambientale.**

2. Le aree di cui al precedente comma sono indicate negli elaborati P.06.1-7 .

3. Gli strumenti urbanistici dei Comuni si informano, nel rispetto della disciplina paesaggistica vigente, ai seguenti criteri:

a) il recupero e la riqualificazione paesaggistica delle aree degradate è attuata esclusivamente mediante **specifici progetti previsti da normative di settore (ad es.: cave, siti inquinati) o piani attuativi.** I piani indicano gli interventi diretti al recupero e/o alla riqualificazione paesaggistica delle aree degradate e alla loro reintegrazione nel contesto ambientale, paesistico e funzionale del territorio;

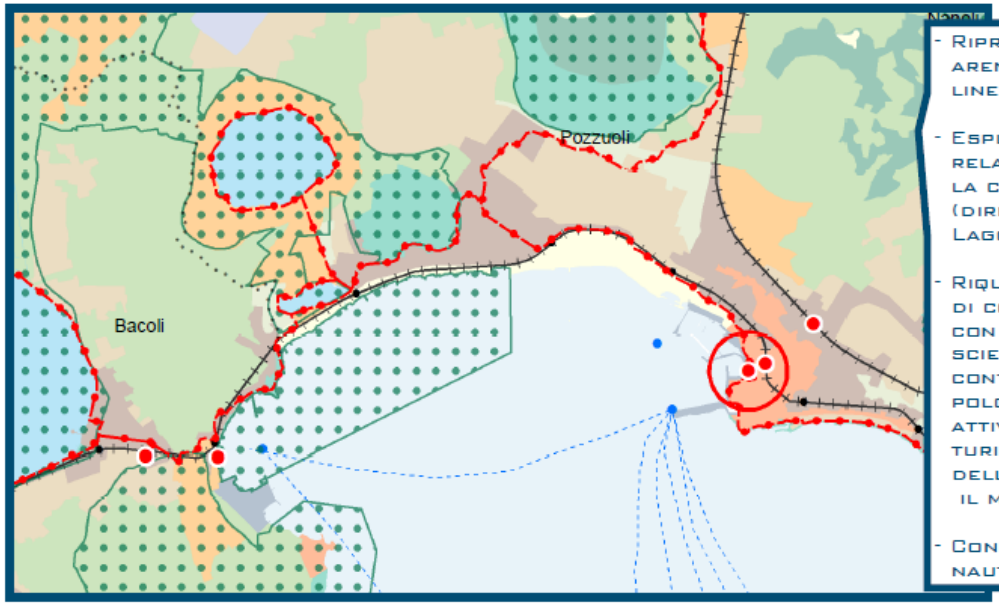
b) la riqualificazione paesaggistica delle aree degradate comprese in contesti urbanizzati o ai loro margini è finalizzato prevalentemente a **migliorare gli standard urbanistici, alla realizzazione di nuove infrastrutture e servizi o all'ampliamento e completamento di attrezzature esistenti**;

c) il recupero e/o la ricomposizione ambientale e/o paesistica delle aree degradate ricadenti nel territorio aperto è finalizzato al ripristino delle condizioni originarie o alle condizioni più prossime e compatibili con i caratteri naturali del territorio. Gli interventi di risanamento ambientale (rimodellazione del terreno, risanamento idrogeologico, disinquinamento, rimboschimento, ecc.) devono essere supportati da adeguati studi;

d) ove il degrado è causato da attività in corso, l'azione di recupero prevede la realizzazione delle opere dirette a mitigare gli impatti negativi da individuare con appositi studi; tali opere possono avere anche finalità preventive;

e) **i progetti o i piani attuativi, di cui alla precedente lett. a), di recupero e di riqualificazione paesaggistica precisano:**
- **le opere da eseguire;**
- **le destinazioni da assegnare alle aree recuperate compatibili con il contesto;**
- **i soggetti titolari delle diverse opere.**

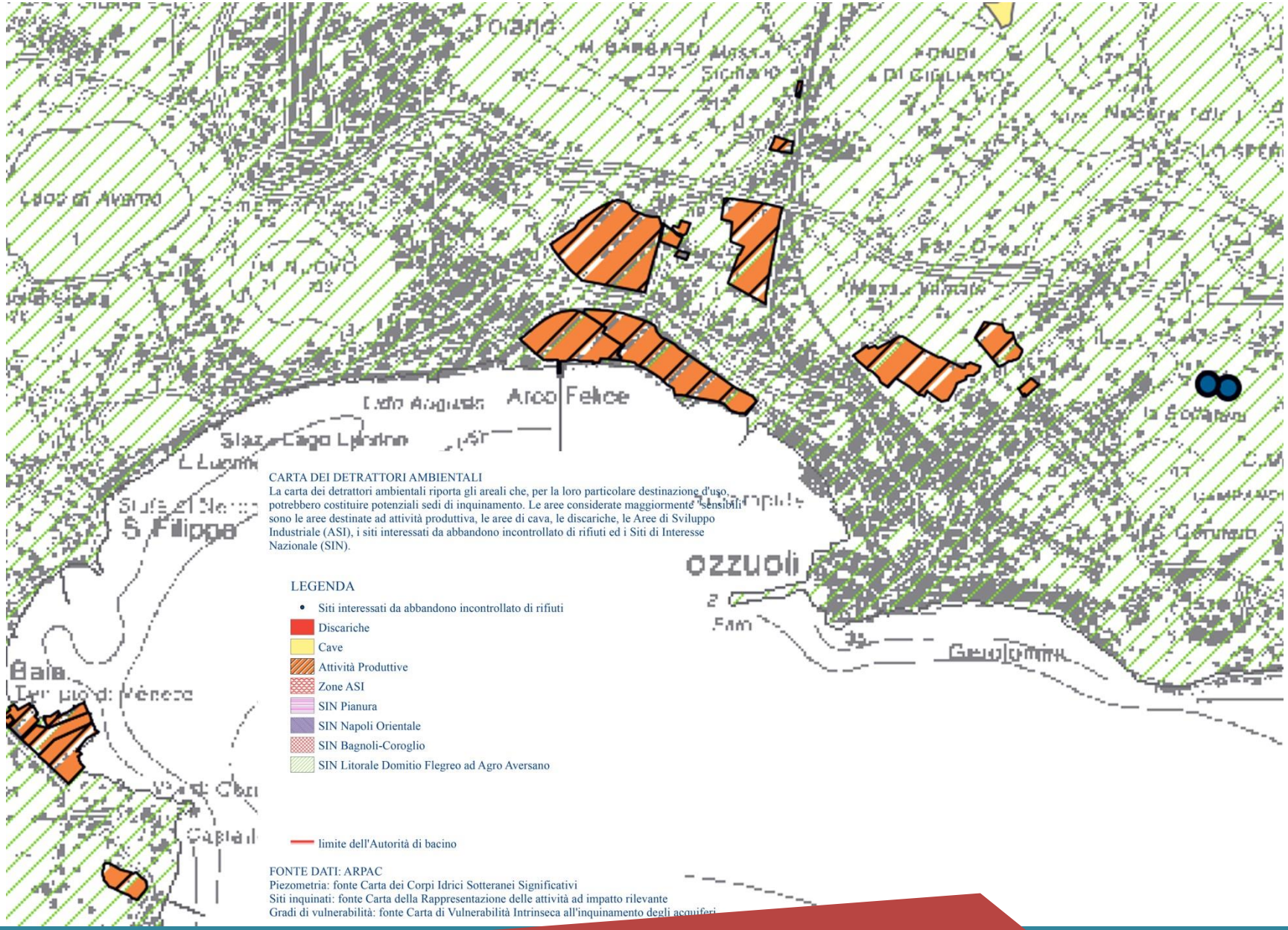
AP2 Riqualificazione aree costiere Baia - Pozzuoli



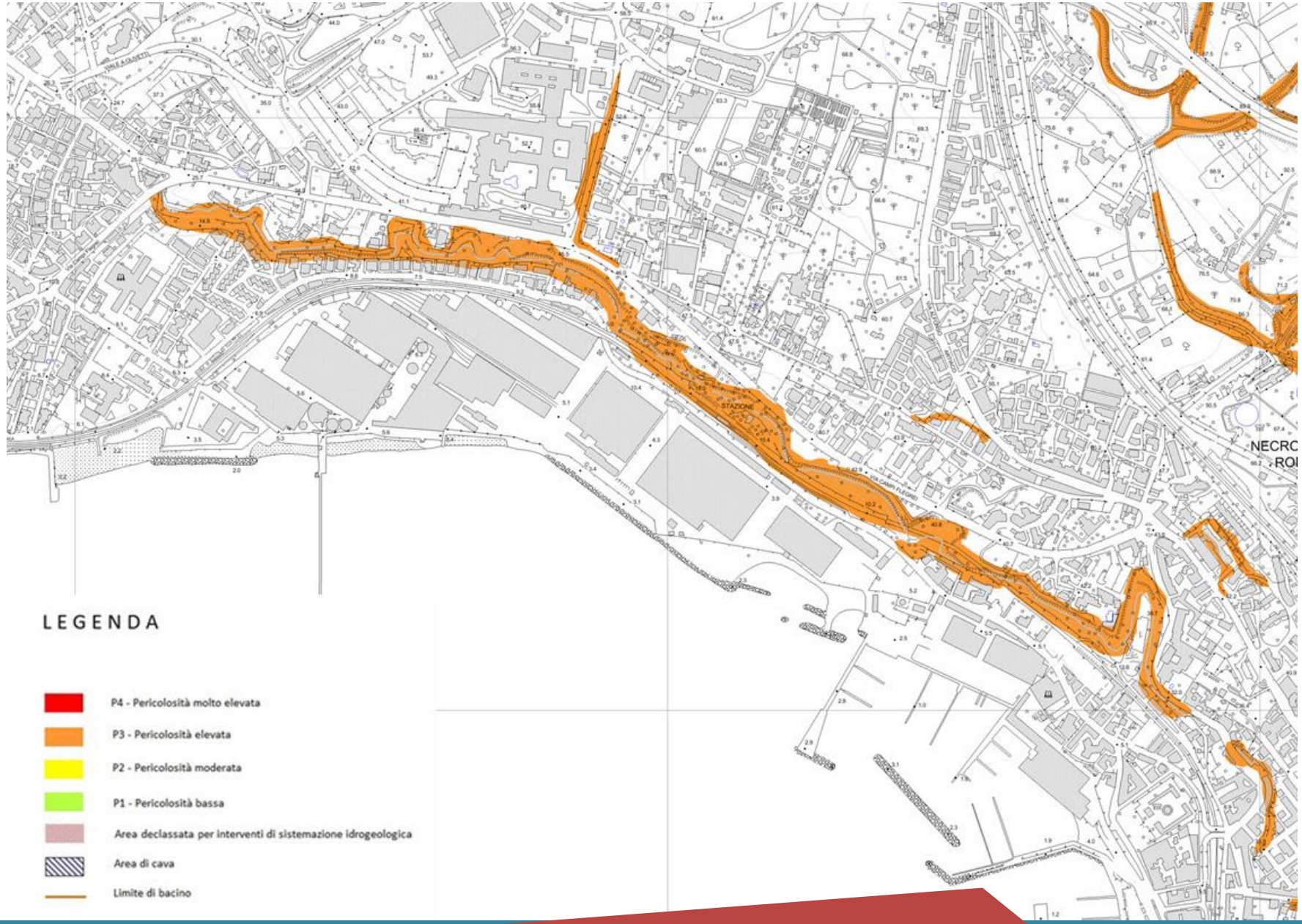
- Ripristino naturalistico degli arenili ed integrazione della linea ferroviaria con il paesaggio.
- Esplicitazione del sistema di relazioni paesaggistiche tra la costa e l'entroterra (direttrici via Campana e Lago d'Averno)
- Riqualificazione della linea di costa urbana di Pozzuoli con la creazione di un Polo scientifico-tecnologico, in continuità con l'esistente polo dell'ex Olivetti, con attività complementari turistico-alberghiere della parte prospiciente il mare
- Consolidamento del Polo nautico

5d. CARTOGRAFIA DELL'AUTORITA' DI BACINO

CARTA DEI DETRATTORI AMBIENTALI

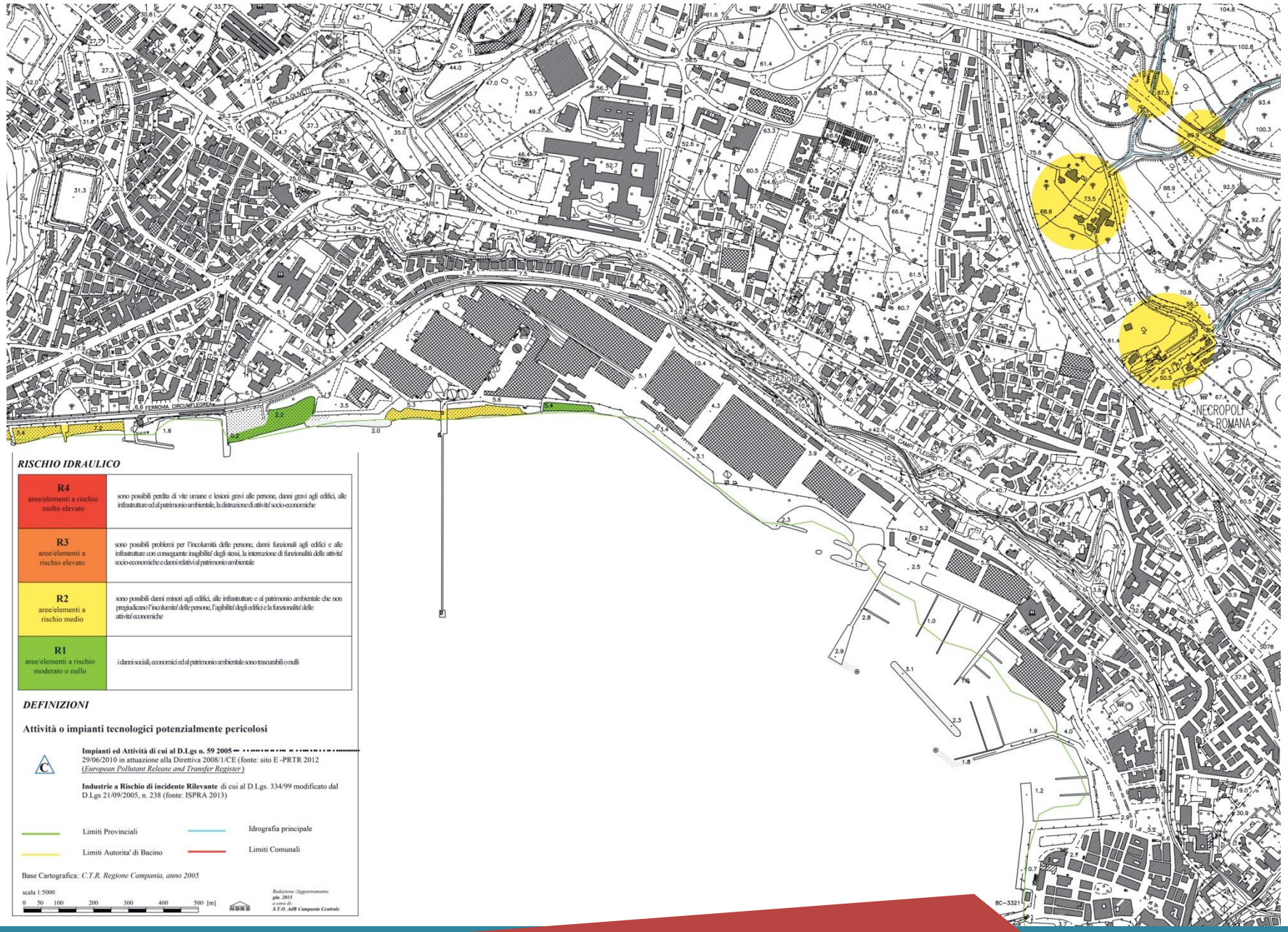


PIANO STRALCIO PER L'ASSETTO IDROGEOLOGICO – PERICOLOSITA' DI FRANA



PIANO STRALCIO PER L'ASSETTO IDROGEOLOGICO – RISCHIO DA FRANA

PIANO DI GESTIONE DEL RISCHIO DI ALLUVIONE – MAPPA DEL RISCHIO IDRAULICO

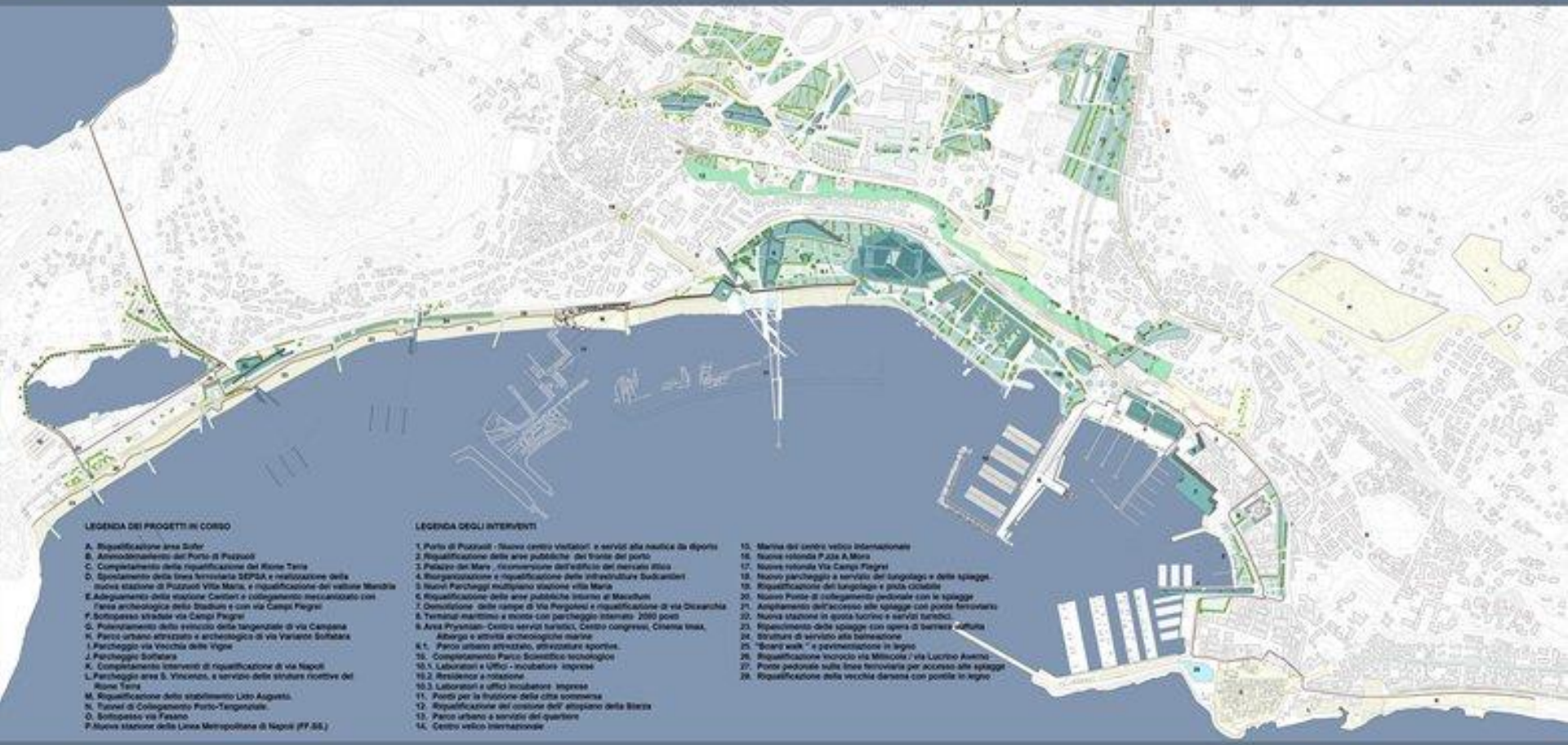


5e. MASTERPLAN DELLA LINEA DI COSTA

Comune di Pozzuoli

Waterfront Flegreo S.p.A

Masterplan della linea di costa di Pozzuoli



Promotore: Waterfront FlegreoS.p.a
Soggetto attuatore: Waterfront Flegreo S.p.a/ Comune di Pozzuoli
Progettisti: Einseman Architects PC, PA Interplan 2 s.r.l., AZ Studio - arch. G. Zuliani - Gnosis Architettura
Finanziamento pubblico: € 600,000,000.00
Finanziamento privato: € 0,00
Valore totale dell'investimento: € 600,000,000.00
Anno di presentazione del progetto: 2009

EISENMAN ARCHITECTS
INTERPLAN SECONDA
AZ studio
Peter Eisenman
Camillo Gubitosi
Alessandro Gubitosi
Guido Zuliani
Sallie Hambright
Giovannella Pezzullo
Giovanni Tortorelli
Rossana Gallo
Vincenzo Amato

La redazione del Masterplan della Linea di Costa di Pozzuoli, dal Molo Caligoliano alla Punta Epitaffio, è stata commissionata al Gruppo di progetto composto da Eisenman Architects, Interplan Seconda Srl, AZ Studio dalla Waterfront Flegreo S.p.A. come effetto del Protocollo di Intesa firmato con il Comune di Pozzuoli il 22 Novembre 2007. Il Protocollo introduce il progetto per la nuova Pozzuoli e sancisce un patto tra Pubblico e Privato per restituire il mare alla città.

La nuova configurazione dell'area, messa a punto dal gruppo guidato da Eisenman, ha come obiettivo il rilancio della città e dell'area flegrea in generale. Si tratta, in particolare, di progetti elaborati con l'obiettivo di sviluppare la linea di costa attraverso la valorizzazione del patrimonio archeologico, la dismissione delle aree industriali e la riqualificazione del lungomare, mediante l'introduzione di nuove strutture ricettive e la riconversione del porto per una fruizione turistica.
L'obiettivo strategico della nuova configurazione è quello di superare trasversalmente gli elementi-barriera longitudinali presenti, con lo scopo di rendere fruibili le vaste risorse naturali e storico-archeologiche di Pozzuoli, oggi in gran parte precluse o disconnesse.

I precetti su cui si basa la strategia di sviluppo dell'area individuata dal Masterplan della Linea di Costa sono:

- Lo **sviluppo economico della città non può prescindere dalla valorizzazione del patrimonio archeologico esistente** attraverso il miglioramento e la realizzazione di una rete di accesso ai siti e la loro valorizzazione;

- La **graduale dismissione delle aree industriali** attualmente insistenti su un lungo tratto di litorale rappresenta **un'opportunità strategica** di primaria importanza per il rilancio del turismo;

- La **fruizione turistica di Pozzuoli può essere incrementata** (anche grazie alla riqualificazione del lungomare) e migliorata qualitativamente e quantitativamente, trasformando il turismo da una tipologia escursionistica (di breve durata e corto raggio) ad una tipologia caratterizzata da una maggiore permanenza e da medio e lungo raggio. Tale trasformazione implica l'introduzione di nuove strutture ricettive a 4 e 5 stelle per una capacità approssimativa di 400-500 camere (in parte già previste nell'ambito dell'intervento del Rione Terra);

- Il **programmato sviluppo del porto di Pozzuoli rappresenta,** unitamente alla realizzazione del previsto terminal marittimo e il relativo collegamento viario in tunnel con il porto, **un altro elemento strategico** per il potenziamento della fruizione turistica della città e per rispondere all'aumento della domanda diportistica.

La trasformazione strategica parte dall'individuazione di alcuni elementi attrattori:

- **Attrattori naturalistici**. Espansione e potenziamento della consistenza dei lidi occidentali mediante ripascimento delle spiagge e creazione di un "bord-walk" attrezzato con nuovi punti di accesso (superiormente e inferiormente alla linea ferroviaria). Realizzazione di nuovi parcheggi;
- **Attrattori culturali**. Realizzazione di interventi puntuali di interconnessione per l'accessibilità ai siti archeologici, Centro congressi e auditorium, Acquario e museo del mare, Centro attività archeologiche marine;
- **Attrattori ricreativi**. Sviluppo del porto turistico e di servizi alla nautica da diporto, istituzione dell'Accademia Internazionale della Vela; realizzazione del Centro Visitatori e del Palazzo del Mare (riconversione del mercato ittico). Riqualificazione del Borgo Vicereale.
- N**uove strutture ricettive**. Realizzazione di strutture alberghiere, ricettive e centri termali. Completamento strutture turistiche del Rione Terra.
- **Nuove strutture di supporto**. Realizzazione di nuove attività commerciali e di servizio al turismo.

Le nuove centralità e attività individuate dovranno essere supportate da **nuove infrastrutture di trasporto**.
Il potenziamento e ammodernamento delle linee ferroviarie (e delle relative stazioni) è già un dato di fatto e molti progetti sono in stato avanzato di elaborazione. Lo spostamento della linea ferroviaria in galleria nel tratto che attraversa il centro della città offre, inoltre, l'opportunità per il riutilizzo del tracciato della vecchia linea; su tale tracciato è prevista la realizzazione di un asse pedonale e per mezzi pubblici leggeri (navette).
La percorribilità pedonale lungo tutta la costa è garantita dall'introduzione di un "board walk" pavimentato in legno che delimita il bordo a monte delle spiagge ed attraversa l'area ex-Sofer fino al nuovo molo del porto.
La pedonalità è inoltre arricchita dai due nuovi percorsi archeologici trasversali che attraversano il costone della Starza, coprendo con scale o con mezzi meccanici i circa 40 metri di dislivello fra Via Campi Flegrei e il lungomare, e che si uniscono alla sistemazione già prevista del vallone Mandria.
Il Masterplan prevede, inoltre, l'implementazione di piste ciclabili che, senza soluzione di continuità, percorrono tutta la linea di costa da Via Napoli a Lucrino, connettendosi al percorso in parte già esistente del lungo lago d'Averno.
L'accessibilità delle aree costiere sarà potenziata attraverso l'introduzione del collegamento in tunnel Tengenziale-Porto (a servizio anche del terminal marittimo) e la realizzazione di un nuovo parcheggio interrato (servito dalle navette leggere). Il terminal sarà configurato per ospitare la sosta dei veicoli da imbarcare sui traghetti, riducendo significativamente il "peso" di questi ultimi sul sistema del traffico del lungomare. Le aree costiere da riqualificare, i nuovi alberghi, le strutture museali e i centri servizi saranno, inoltre, supportati da nuove infrastrutture di parcheggio, di tipologia multipiano (in elevazione e interrate).

5f. QUADRO NORMATIVO DI RIFERIMENTO – PIANO URBANISTICO ATTUATIVO APPROVATO

Approvato con delibera commissariale n. 20 del 15 Marzo 2012

Anno: 2009
Località: Pozzuoli - Napoli
Descrizione: Redazione del P.U.A. per l'intervento di riqualificazione dell'area ex SOFER finalizzato alla realizzazione di un Centro Polifunzionale per il turismo per il commercio, il tempo libero e di un Polo attrezzato per lo sviluppo delle arti e delle professioni.
Committente: Waterfront Flegreo S.p.a

Il progetto, affidato allo studio Gnosis Architettura, approvato definitivamente nel 2012, si inserisce nel più ampio disegno del Masterplan generale dell'architetto Peter Eisenman.
Obiettivo del PUA è la riqualificazione dell'area industriale dismessa del complesso ex Sofer mediante la creazione di un nuovo spazio pubblico aperto alla città che, fondendosi all'esistente, diventi generatore di nuove destinazioni.
Il progetto intende offrire alla vita pubblica un lungo nastro di verde attrezzato, pensato come elemento di riconnessione della fascia costiera all'intera città, ed un'ampia area dedicata a molteplici attività, fonti di nuova linfa per l'intero comprensorio puteolano.
L'obiettivo del PUA approvato è quello di creare un vero e proprio polo di attività che favorisca il potenziamento e lo sviluppo dei seguenti settori: turismo, commercio, tempo libero, benessere del singolo e lo sport.

Le azioni fondamentali del progetto sono:
- creare uno spazio pubblico di alta qualità ambientale;
- relazionarsi con le testimonianze del passato recuperabili sull'area e con lo stesso centro storico, per fondere la nuova architettura alle preesistenze storiche;
- generare uno spazio brulicante di vita attraverso una molteplicità di funzioni ed attrattive.

L'intera area, segnata dalle direttrici individuate dai capannoni industriali, viene suddivisa per ambiti funzionali secondo la forte impronta a terra lasciata dalle stesse strutture produttive. Il recupero della memoria del sito, con la sua storia e le sue eredità, sopravvive nei ricordi tramite il forte disegno dell'impianto della fabbrica, che si recupera nell'alzato.

Il **tema del verde e degli spazi pubblici** rappresenta un motivo dominante nella genesi del progetto, un elemento integrante e unificatore, declinato in diverse ipotesi progettuali.
In tal senso si vuole creare un grande parco attrezzato lungo il fronte a mare, accessibile a piedi direttamente dal centro città. Tale parco, progettato con l'intento di dare vita allo spazio circostante e promuovere la passeggiata sul lungomare, si snoda lungo tutta la fascia costiera dell'area; al suo interno trovano posto **tre piazze** a carattere urbano e piccole attività di ristorazione.
All'estremità orientale della passeggiata, in prossimità del nuovo porto di Pozzuoli, all'ingresso pedonale principale dell'area, si trova la Piazza della Vela (ampia piazza a verde prospiciente la darsena). Tale piazza è segnata dal recupero di un fabbricato esistente e dagli edifici che accoglieranno il Centro di Culto, la sede dell'Accademia Internazionale della Vela ed il Circolo Nautico.
A coronamento della passeggiata verso ovest trova sede più opportuna, chiusa tra la ferrovia e le fabbriche circostanti, l'area dedicata al Centro Servizi Polifunzionale, sviluppato sull'impronta lasciata dai lunghi capannoni preesistenti, in stretto dialogo con l'antistante Piazza Belvedere. Questa, protesa verso il mare, si interseca con la quasi ortogonale Piazza della Stazione, punto di arrivo della ferrovia.
Il Centro Servizi è considerato il fulcro ed il catalizzatore dello spazio pubblico. Gli edifici destinati alla funzione ricettiva, il complesso Albergo e Spa ed il Polo Arti e Mestieri si articolano secondo andamenti fortemente influenzati dall'area di sedime dei precedenti capannoni, adattandosi al contempo alle forti linee generatrici del Masterplan generale. Il primo di essi si sviluppa con andamento quasi ortogonale alla linea di costa (leggermente ruotato) e, unitamente al centro termale, definisce un ambito pubblico a carattere più intimo. Lo stesso vale anche per gli edifici destinati a laboratori per piccole attività produttive che, ad andamento diverso, creano tra loro delle corti di ambito più riservato.
Il compito di raccordare armoniosamente le diverse destinazioni d'uso è affidato al grande parco verde attrezzato: un lungo nastro verde che si dipana parallelamente al mare, leggermente più alto di esso, e che rende possibile la vista panoramica dal Golfo di Pozzuoli. Il ruolo di elemento totemico è, quindi, rappresentato da un elemento a sviluppo orizzontale piuttosto che verticale.

Le altezze degli edifici di nuova costruzione seguono quelle dei capannoni preesistenti, alcuni dei quali restituiti a nuova funzione. In tal modo si restituiscono alla città oltre 130.000 mq di spazi pubblici e di verde attrezzato. Nella nuova configurazione progettuale le superfici costruite costituiscono il 25% dell'intera area.
Il piano si inserisce nei programmi in atto per il miglioramento della viabilità (nuovo asse di collegamento tangenziale-porto; sottopasso ad Arcofelice) e della rete di trasporto su ferro (Stazione Cantieri della linea metropolitana «Cumana»), dell'ampliamento del porto (commerciale e turistico) e del recupero dei beni archeologici (Stadium) con la creazione di un parco nell'area della Starza.
L'area è concepita come interamente pedonale e ciclabile. Per facilitare il flusso veicolare, alle spalle del complesso viene raddoppiata l'esistente via Fasano con un'ampia strada interna al lotto. Tale strada è in collegamento con la Tangenziale di Napoli (attraverso un asse viario in galleria) e con Arco Felice (mediante un nuovo sottopasso della linea ferroviaria).
Il progetto prevede la creazione di ampi parcheggi, in gran parte coperti.

In sintesi, il piano complessivo, partendo dalla conservazione di alcune parti della fabbrica preesistente, prevede (su un'area di 174.380,00 mq) la realizzazione di:

- Nuova **viabilità primaria** e riqualificazione del tratto di Via Fasano interessato (14.840,00 mq complessivi - pari a circa l'8% dell'intervento complessivo);

- Un **grande parco urbano attrezzato** sul lungomare, per una lunghezza di circa 800,00 m ed una profondità non inferiore a 80,00 m, per circa 45.000,00 mq (pari a circa il 26% dell'intervento complessivo), per un totale di circa 30.000,00 mc (comprensivo di attività per la fruizione);

- Un complesso integrato di **attività per la produzione di beni** e la **prestazione di servizi ad elevato carattere di innovazione tecnologica**, **per le attività professionali terziarie, direzionali e commerciali, turistico-ricettive e per il tempo libero** (79.000,00 mq - pari a circa il 45% dell'intervento complessivo - ed una volumetrica complessiva di circa 620.000,00 mc – pari al 70% della volumetria esistente, ovvero 885.623,00 mc).

- **Attrezzature pubbliche e ad uso pubblico** (parcheggi, attrezzature di interesse comune, attrezzature per l'istruzione) per circa 35.000,00 mq (pari a circa il 21% dell'intervento complessivo).

Le aree pubbliche e/o ad uso pubblico rappresentano oltre il 55% del totale delle aree del PUA.
Considerando che attualmente i capannoni industriali occupano una superficie coperta pari al 60% del totale dell'area, risulta che il PUA libera aree pubbliche o ad uso pubblico, consentendo, oltre alla fruizione oggi interdetta del lungomare, anche nuovi accessi dalla città.

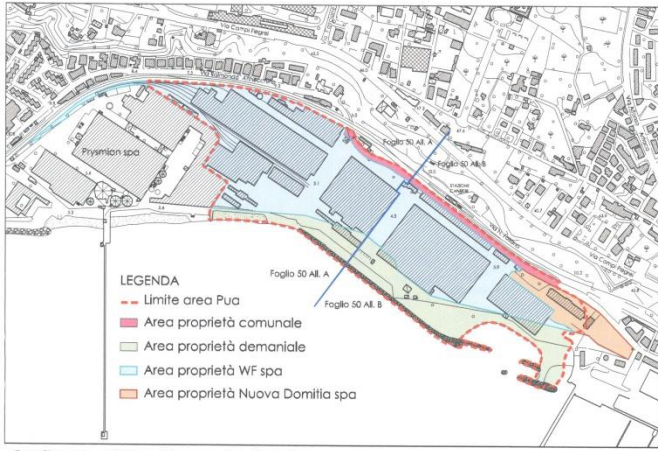


Grafico e - Titolo di proprieta' delle aree

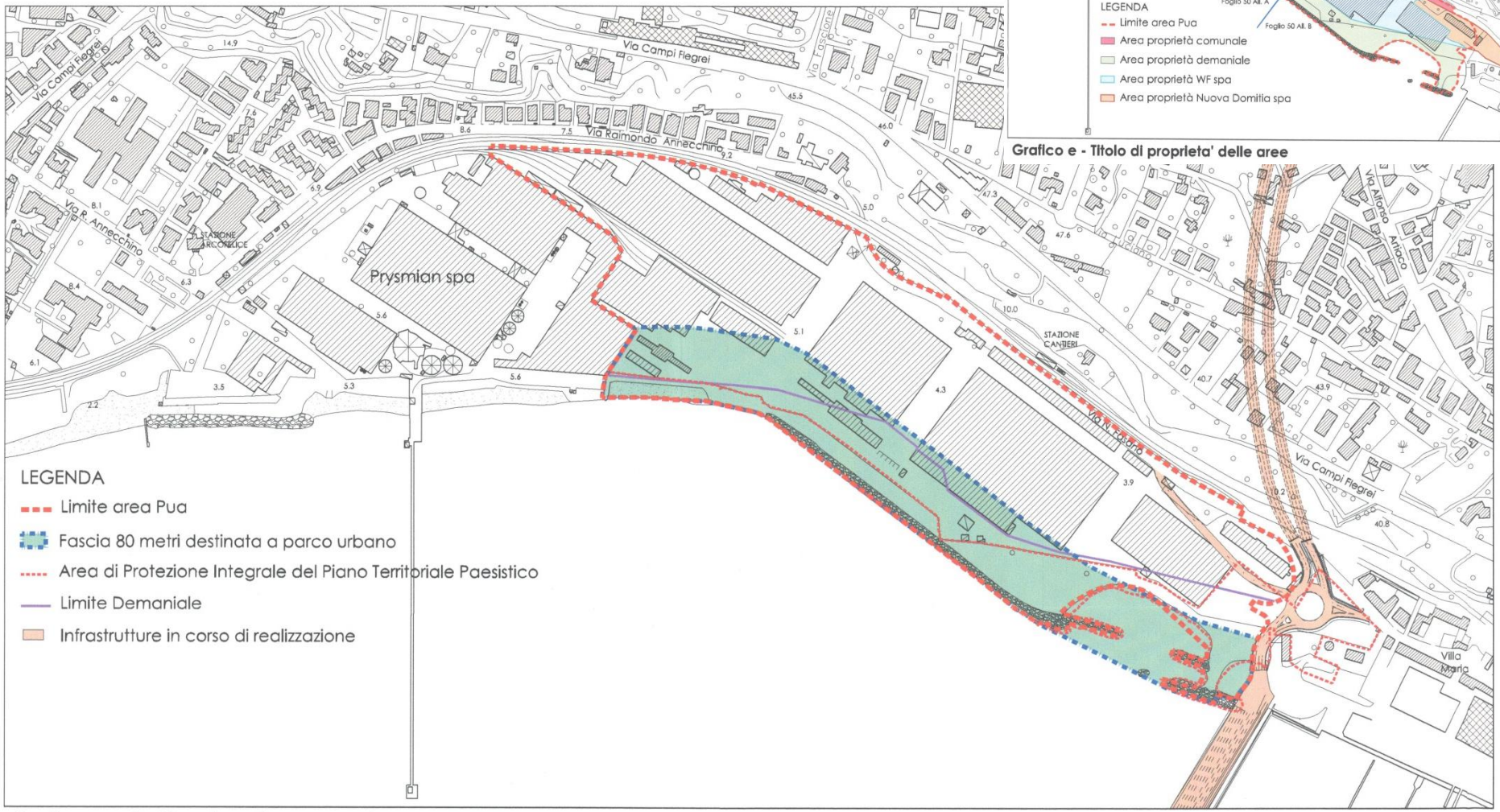


Grafico a - Limiti e vincoli prevalenti

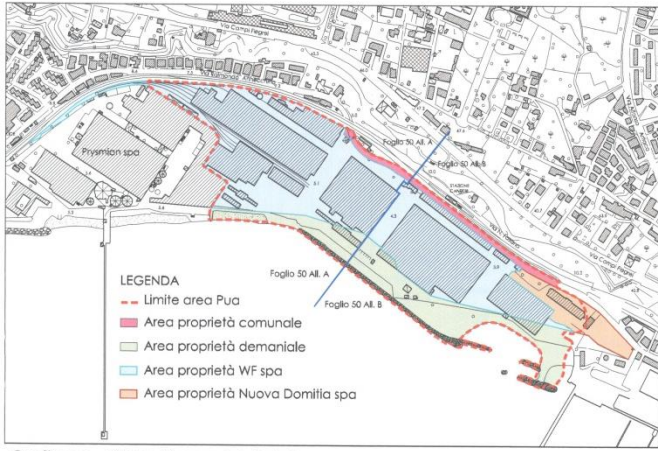


Grafico e - Titolo di proprieta' delle aree

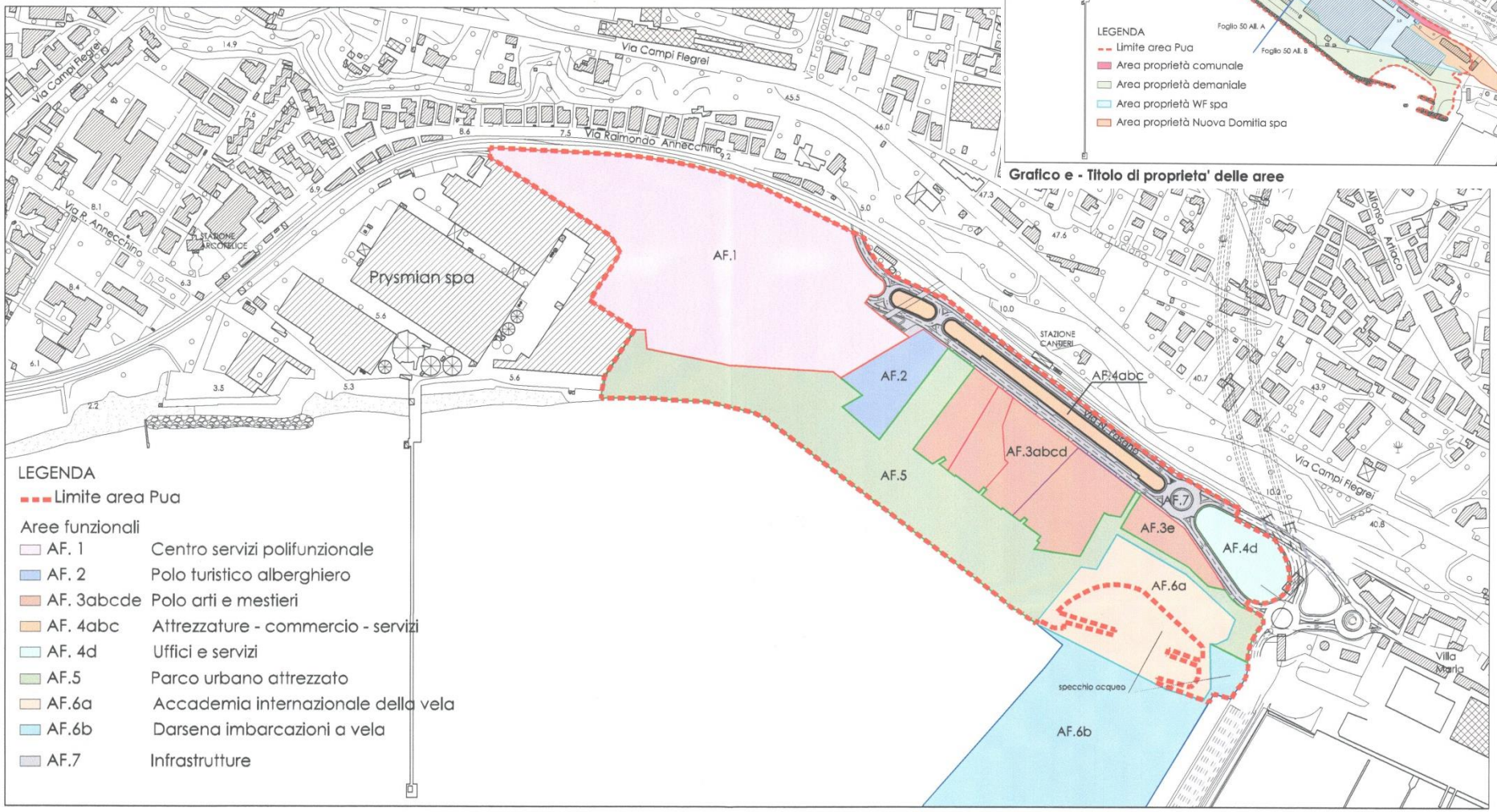


Grafico b - Progetto di piano e disciplina d'uso - Suddivisione in aree funzionali (cfr. Tav. D-060)

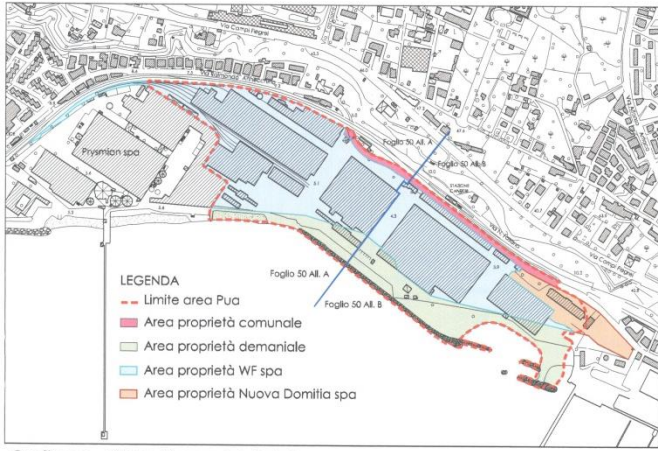


Grafico e - Titolo di proprieta' delle aree

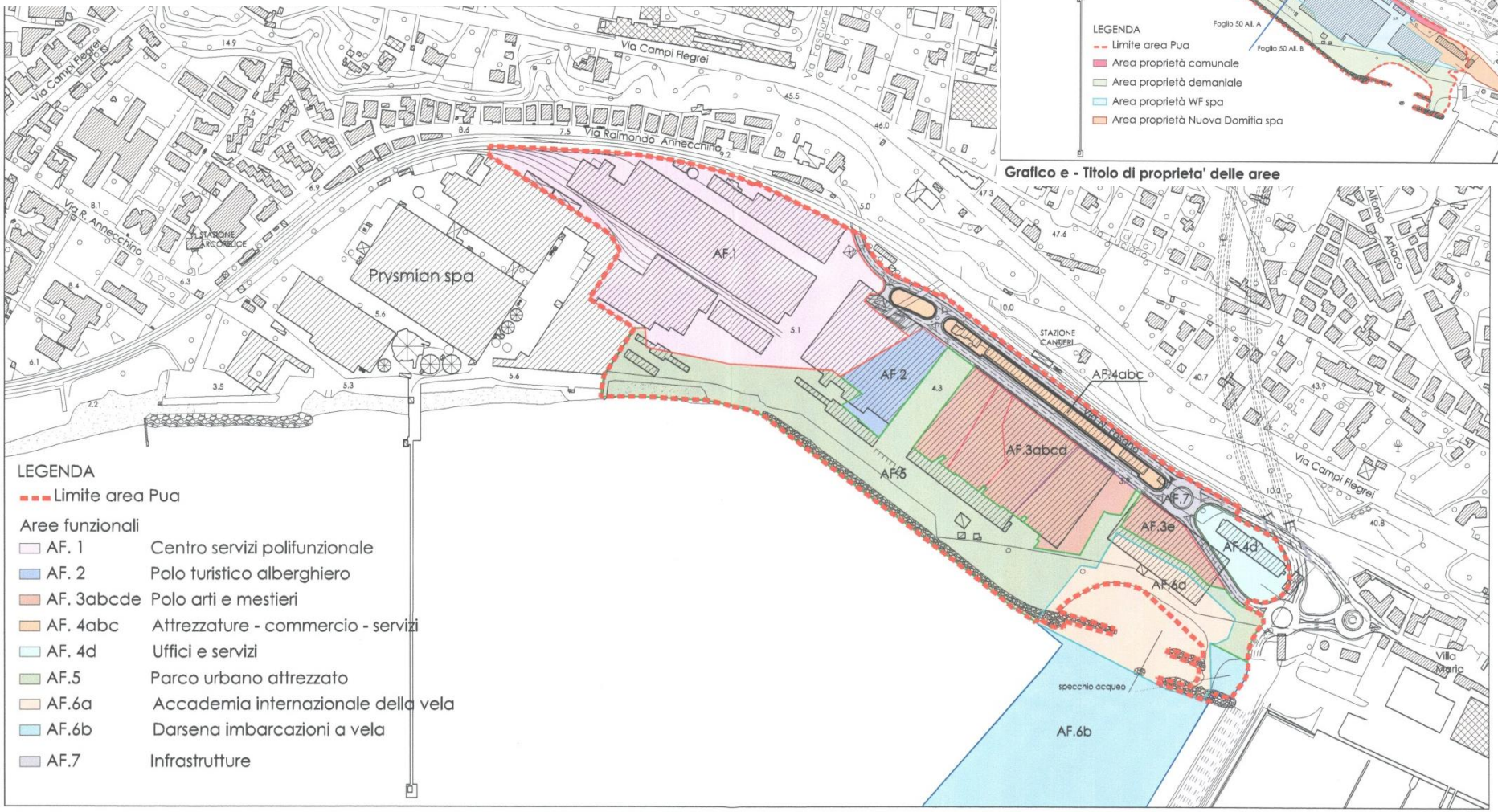


Grafico c - Progetto di piano e disciplina d'uso - Suddivisione in aree funzionali - su base cartografica (cfr. Tav. D-060)

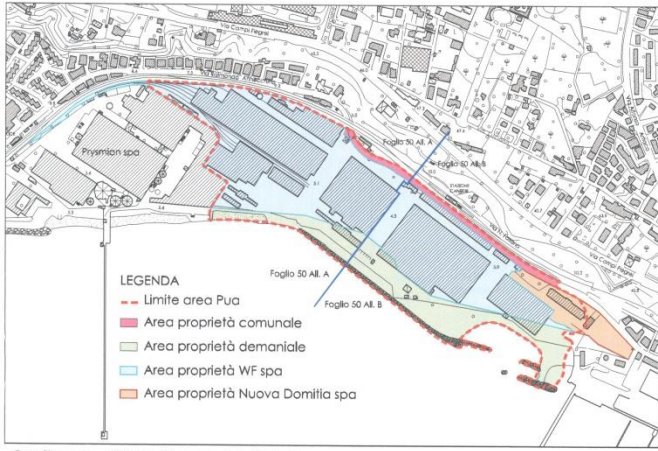
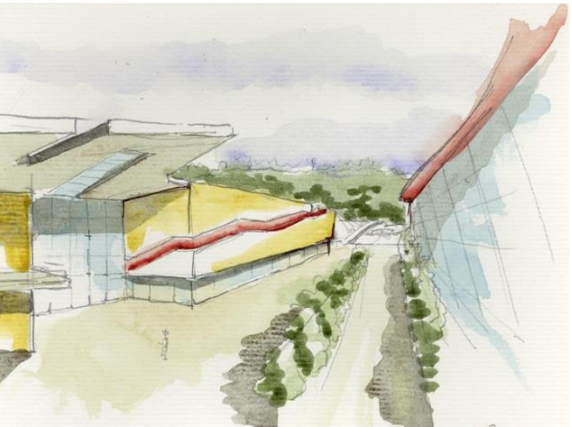


Grafico e - Titolo di proprieta' delle aree

Grafico d - Ipotesi di planovolumetrico possibile (cfr. Tav. D-050)



5g. QUADRO NORMATIVO DI RIFERIMENTO – PROPOSTA DI REVISIONE DEL PUA APPROVATO

La società Waterfront Flegreo Spa ha presentato, il giorno 2 Novembre 2015, una **''Proposta di Revisione del PUA approvato''.**

La società Waterfront Flegreo SPA ha dichiarato che «.....non vi sono più le condizioni imprenditoriali per poter attuare la riqualificazione dell'area per quelle funzioni e con i gravosi oneri pubblici che ne derivano».

Tale proposta prevede la parziale **modifica delle destinazioni d'uso** previste dal PUA approvato, **convertendo una parte delle attività relative alla produzione tecnologica e artigianale e alle attività per uffici in attività residenziali** (comprensive di quote di Social Housing, in riferimento alla l.r. 19/2009 – Piano Casa).
La proposta prevede, dunque, la realizzazione di circa 70 alloggi sociali (alloggi immessi sul mercato a prezzi di vendita di locazione calmierati rispetto a quelli di mercato) nonché l'ampliamento del parco attrezzato e la diversa articolazione della viabilità e delle aree di parcheggio (al fine di consentirne una migliore fruizione).

In sintesi, la proposta di revisione del PUA prevede:

- Riorganizzazione del sistema della viabilità (opere di urbanizzazione primaria);

- Modifica della destinazione d'uso dell'area occupata dal Polo delle Arti e dei Mestieri da attività terziarie, attività di servizi, attività commerciali, attività produttive ed alta tecnologia a residenze e attività commerciali al piano terra, con riduzione della volumetria prevista;

- Conseguente modifica della destinazione d'uso dei volumi occupati da uffici, servizi ed attrezzature pubbliche in residenze per alloggi sociali (Social Housing);

- Riorganizzazione delle opere di urbanizzazione secondaria (attrezzature pubbliche e ad uso pubblico), derivante sia dalla nuova funzione residenziale che dalla diversa distribuzione delle attrezzature previste, con incremento quantitativo (maggiori spazi per parcheggi ed aree a verde).

La quota di residenze prevista, al netto degli alloggi Social Housing, non supera il 19% del totale della volumetria complessiva del PUA.

La Waterfront Flegreo SPA ha presentato proposta di revisione del PUA facendo riferimento alla *''gravità della situazione economica che ha, di fatto, azzerato ogni previsione imprenditoriale in fase di avvio...''.* In particolare, la società ritiene che le destinazioni d'uso previste dal PRG e dal PTP dei Campi Flegrei (ricerca di base applicata, servizi alle imprese, produzioni industriali avanzate e ad elevato livello tecnologico, nonché attività scientifico-tecnologiche, culturali, turistiche, produttive, infrastrutturali, ricettive e per il tempo libero) rientrano tra quelle che, in questi anni, hanno subìto il maggior decremento sia in termini di investimenti che di uso.

Inoltre, nella relazione allegata al progetto di revisione del PUA, si fa riferimento *''all'aggravarsi del costo dell'intervento dovuto all'applicazione delle norme nazionali e regionali relative agli obblighi da parte del soggetto attuatore del PUA della realizzazione e cessione delle aree per le opere di urbanizzazione, sia primarie che secondarie, che carica l'investimento di ulteriori oneri di oltre il 15%, che lievitano fino al 18 % se si considerano anche quelli di costruzione''.*

La Waterfront Flegreo SPA ha richiesto una *''modifica parziale delle destinazioni d'uso, convertendo parte delle attività riferite alla produzione tecnologica ed artigianale e parte delle attività per uffici [...] in attività residenziali, comprensive di quote di Social Housing, ai sensi della LR 19/2009 (Piano Casa)''*, facendo in particolare riferimento agli articoli 7 e 12bis.

Legge Regionale 19/2009 (Piano Casa) - Art. 7 Riqualificazione aree urbane degradate

1. La risoluzione delle problematiche abitative e della riqualificazione del patrimonio edilizio e urbanistico esistente, in linea con le finalità e gli indirizzi della legge regionale n.13/2008, può essere attuata attraverso la promozione dello sviluppo sostenibile della città e con strategie per la valorizzazione del tessuto urbano, la riduzione del disagio abitativo, il miglioramento delle economie locali e l'integrazione sociale.

2. Al riguardo *le amministrazioni comunali devono concludere il procedimento*, anche su proposta dei proprietari singoli o riuniti in consorzio, *con provvedimento da adottare, nel rispetto dei termini previsti dalla legge n. 241/90*, in deroga agli strumenti urbanistici vigenti *relativo agli* ambiti la cui trasformazione urbanistica ed edilizia è subordinata alla cessione da parte dei proprietari, singoli o riuniti in consorzio, e in rapporto al valore della trasformazione, di aree o immobili da destinare a edilizia residenziale sociale, in aggiunta alla dotazione minima inderogabile di spazi pubblici o riservati alle attività collettive, a verde pubblico o a parcheggi di cui al decreto ministeriale n.1444/1968. Nella identificazione dei suddetti ambiti devono essere privilegiate le aree in cui si sono verificate occupazioni Abusive.

Sotto il profilo della compatibilità urbanistica la Waterfront Flegreo SPA fa riferimento al comma 2 dell'art.7 che stabilisce che *''l'intervento di destinazione di parte del PUA in residenze si pone in deroga agli strumenti urbanistici vigenti, e quindi alle previsioni del vigente PRG relativamente alle sole destinazioni d'uso''.*

Relativamente al PTP dei Campi Flegrei, secondo la Waterfront Flegreo SPA, "la proposta non comporta modifiche sotto il profilo paesaggistico, *''non rientra nei casi di esclusione di cui all'art. 2 della LR 19/2009".* Inoltre, la società ritiene che *''la modifica delle destinazioni d'uso per residenze è consentita ai sensi dell'art. 12-bis della LR 19/2009 (come modificato dal comma73 della LR 19/2004) che ai comma 4 e 5 prescrive:''*

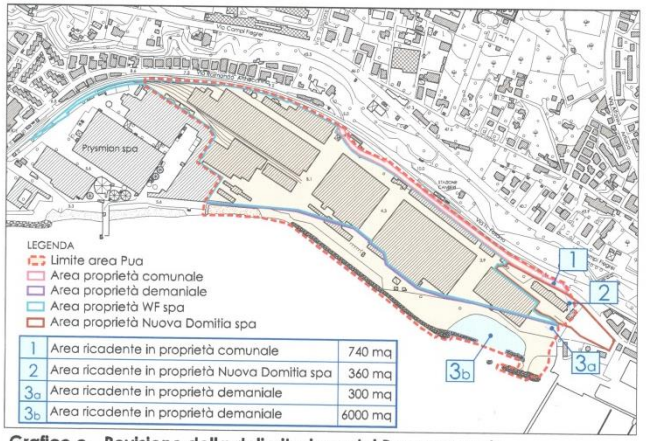
Legge Regionale 19/2009 (Piano Casa) - Art. 12-bis

4. *La presente legge trova applicazione anche nei territori sottoposti PTP e quelli di pertinenza del PUT di cui alla legge regionale 35/1987 fermo il rispetto dell'articolo 142 del decreto legislativo 22gennaio 2004, n. 42(Codice dei beni culturali e del paesaggio ai sensi dell'articolo 10 della legge 6 luglio 2002, n. 137).*(2)

5. *Le definizioni degli interventi di recupero contenute all'articolo 3 del decreto del Presidente della Repubblica 6 giugno 2001, n. 380 (Testo unico delle disposizioni legislative e regolamentari in materia di edilizia) sono prevalenti rispetto alle definizioni contenute nei PRG e nei PTP e PUT approvati prima della data di entrata in vigore della legge statale.* (2)

(2) Comma aggiunto dall'articolo 1, comma 73, lettera g) della legge regionale 7 agosto 2014, n. 16.

Fonte: Revisione del PUA – Tav. REV.01 Relazione



1	Area ricadente in proprietà comunale	740 mq
2	Area ricadente in proprietà Nuova Domitia spa	360 mq
3a	Area ricadente in proprietà demaniale	300 mq
3b	Area ricadente in proprietà demaniale	6000 mq

Grafico e - Revisione della delimitazione del Pua approvato

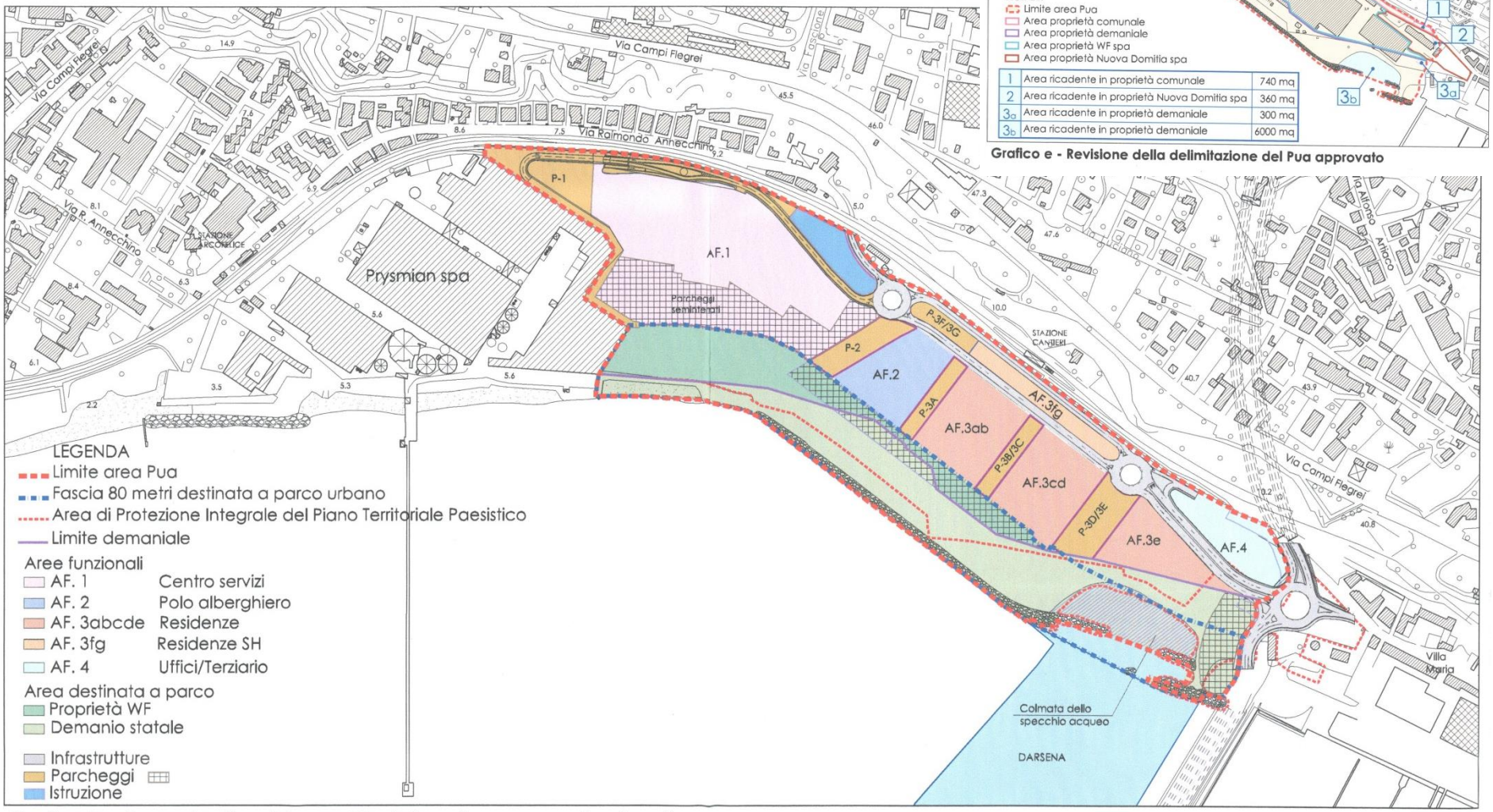
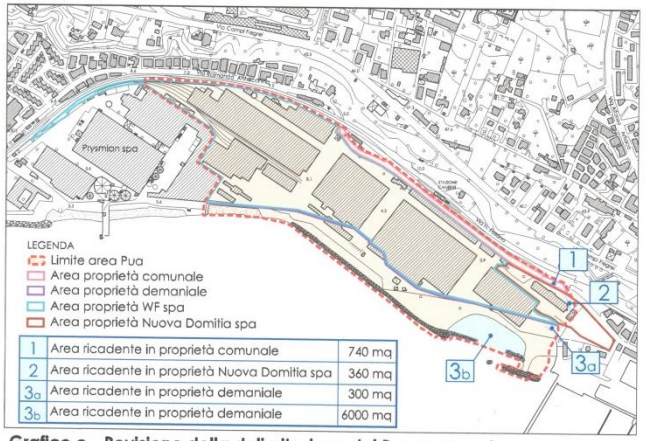


Grafico b - Proposta di revisione - Disciplina d'uso e aree funzionali



1	Area ricadente in proprietà comunale	740 mq
2	Area ricadente in proprietà Nuova Domitia spa	360 mq
3a	Area ricadente in proprietà demaniale	300 mq
3b	Area ricadente in proprietà demaniale	6000 mq

Grafico e - Revisione della delimitazione del Pua approvato

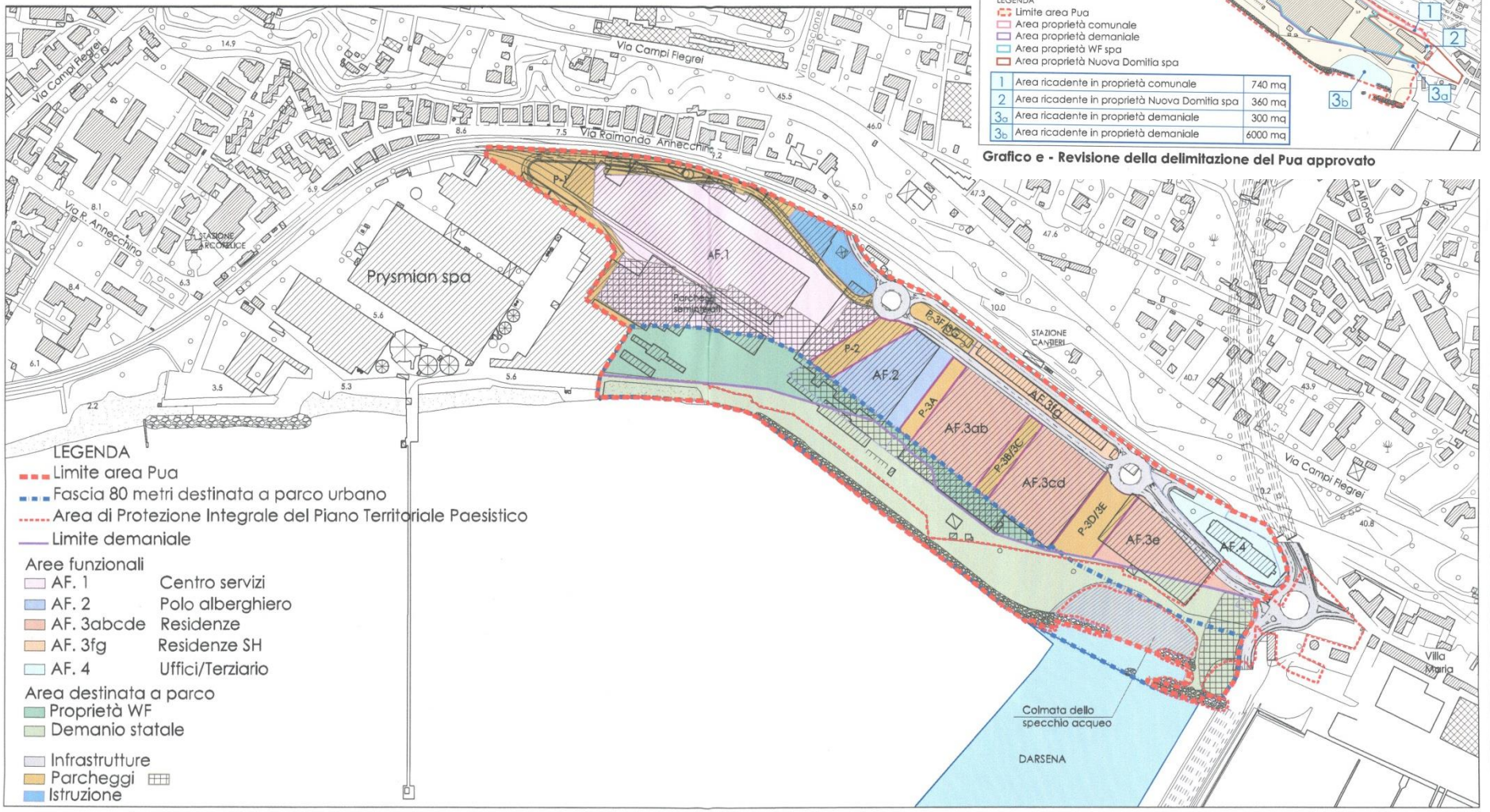


Grafico c - Proposta di revisione - Disciplina d'uso e aree funzionali su base cartografica

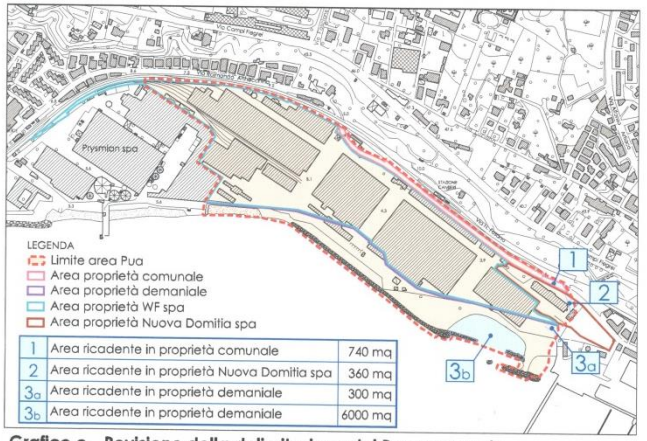


Grafico e - Revisione della delimitazione del Pua approvato

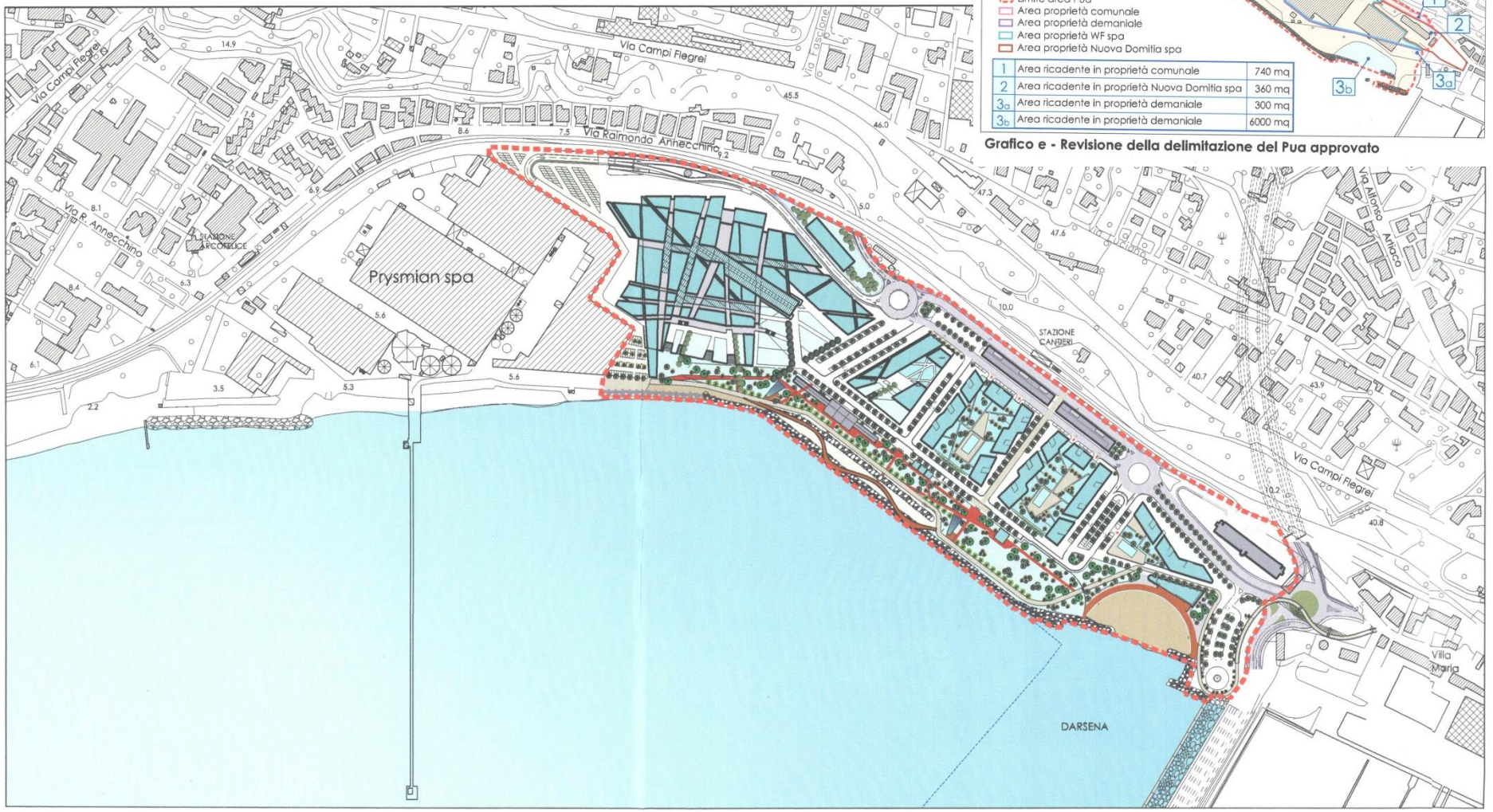


Grafico d - Proposta di revisione - Ipotesi di planovolumetrico possibile

PUA APPROVATO

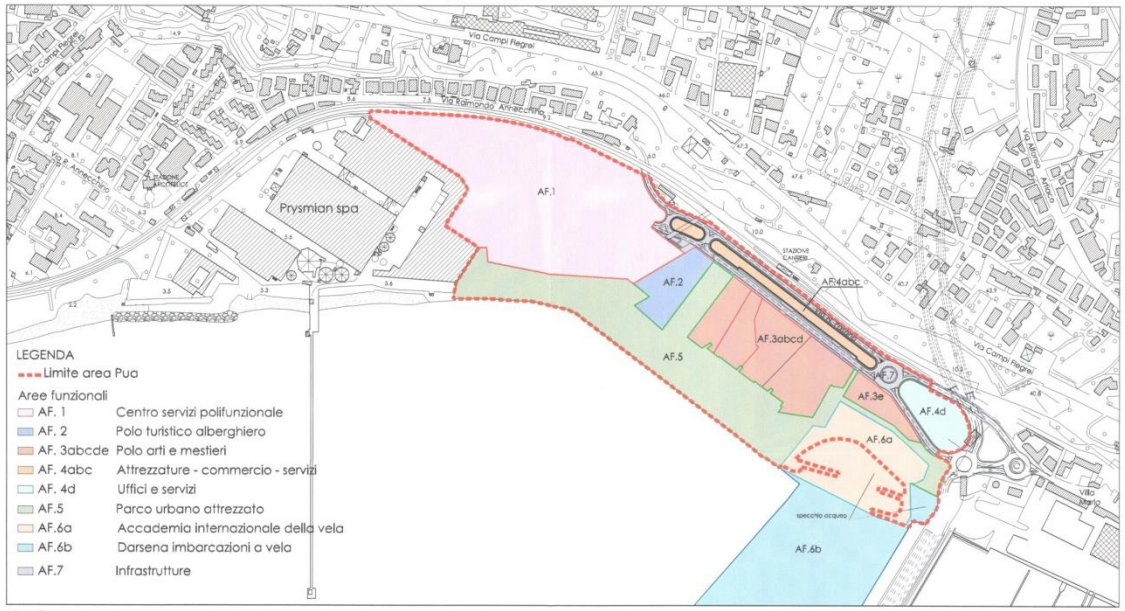


Grafico b - Progetto di piano e disciplina d'uso - Suddivisione in aree funzionali (cfr. Tav. D-060)

PROPOSTA DI REVISIONE DEL PUA

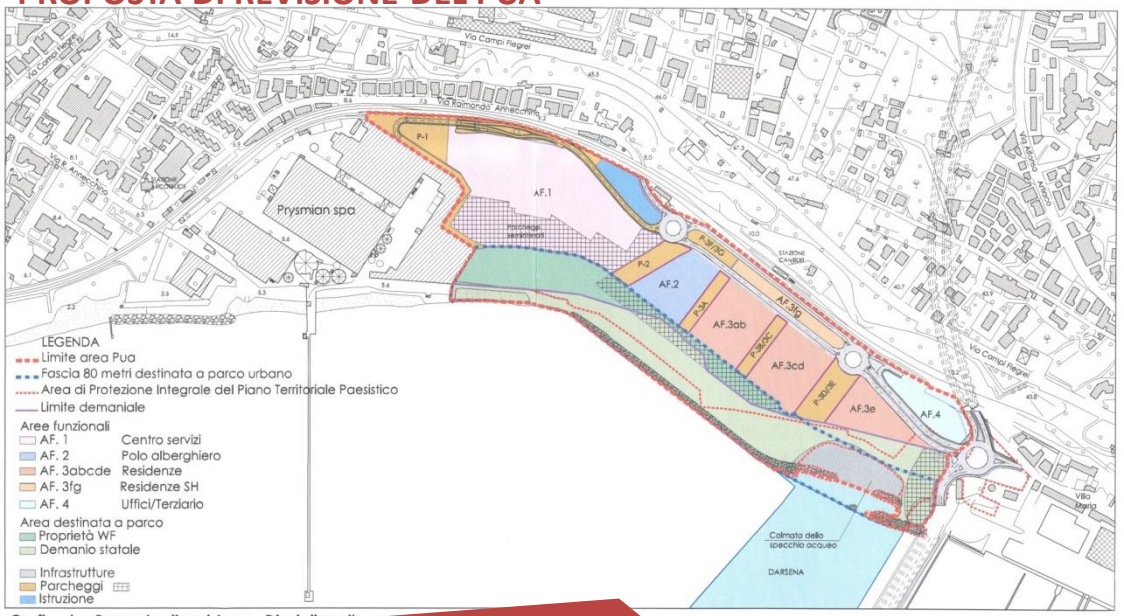


Grafico b - Proposta di revisione - Disciplina d'

PUA APPROVATO

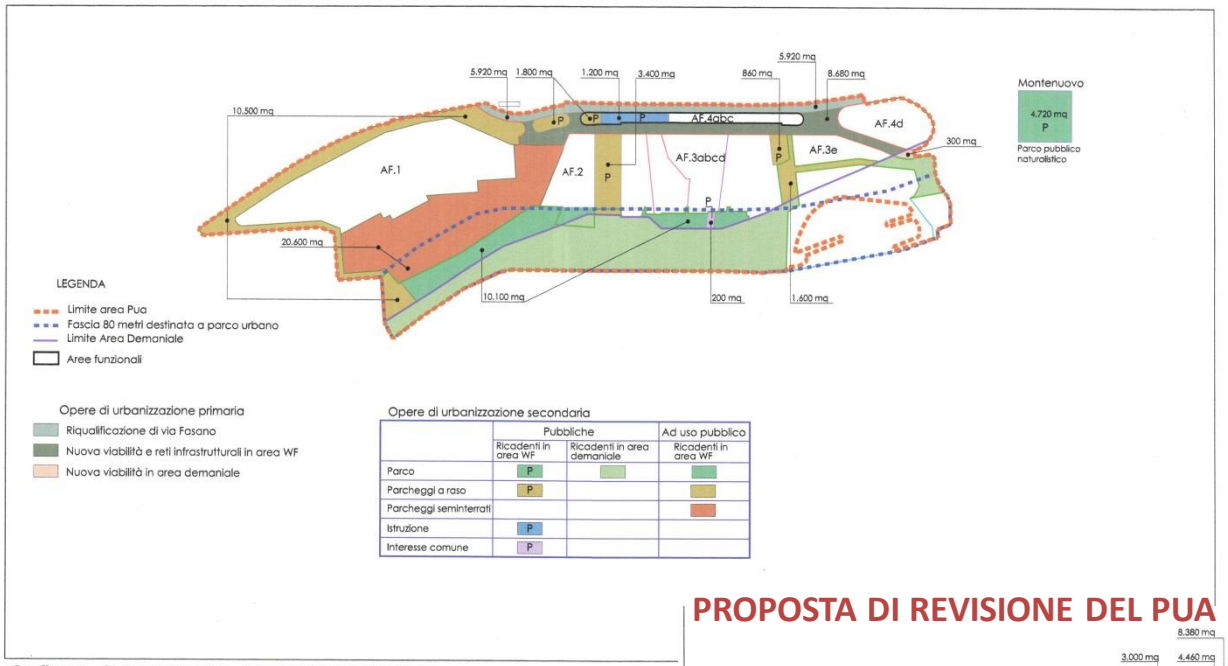


Grafico a - Pua approvato - Opere di urbanizzazione

PROPOSTA DI REVISIONE DEL PUA

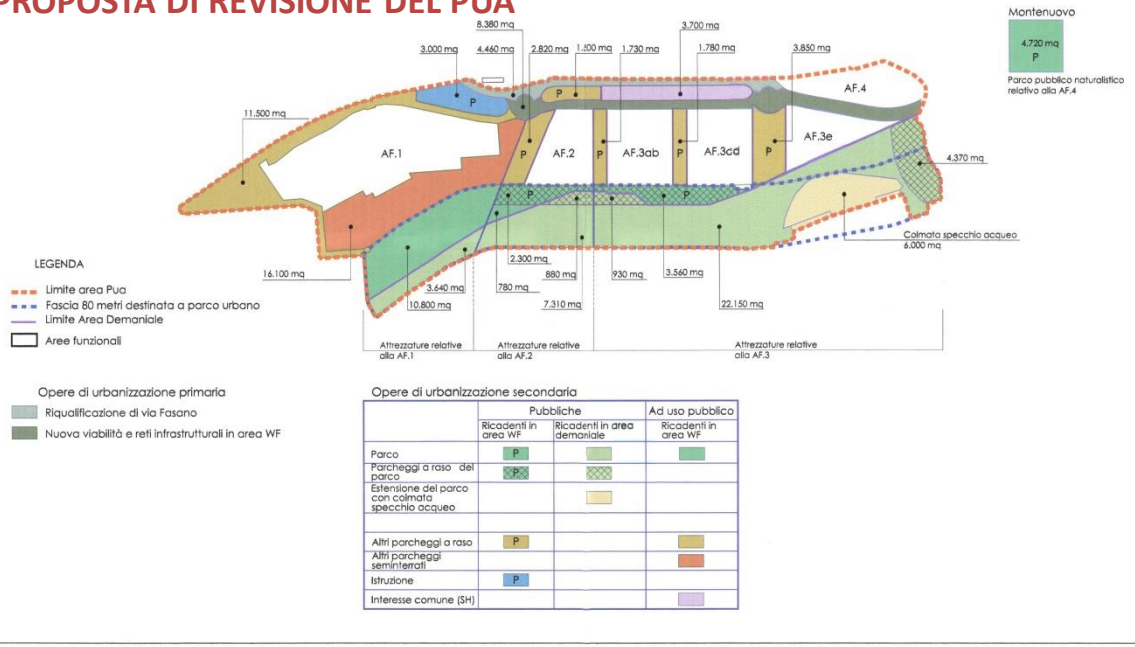


Grafico b - Proposta di revisione - Opere di urbanizzazione

	PUA approvato (mq)	Revisione del PUA (mq)	Differenza (mq)
Superficie complessiva del PUA	174.380,00	181.780,00	7.400,00
Superficie destinata ad opere di urbanizzazione primaria	14.840,00	12.840,00	2.000,00
Superficie destinata ad opere di urbanizzazione secondaria	77.520,00	84.000,00	6.480,00
Superficie destinata ad opere di urbanizzazione secondaria al netto della monetizzazione	54.980,00	68.140,00	13.160,00
di cui per l'istruzione	1.200,00	3.000,00	1.800,00
di cui per interesse comune	200,00	3.700,00	3.500,00
di cui per verde e spazi pubblici	14.820,00	16.300,00	1.480,00
di cui per parcheggi	38.760,00	45.140,00	6.380,00
Superficie destinata a parco urbano sul mare (compreso aree demaniali)	45.000,00	62.720,00	17.720,00
Superfici destinate agli insediamenti privati di riconverisone (aree funzionali)	114.545,00	100.800,00	-13.745,00
Volumetria in aree di riconversione (mq)	619.936,00	619.936,00	0,00

Fonte: Revisione del PUA – Tav. REV.01 Relazione

Delibera n. 86 del 21 Luglio 2016. Giunta Comunale – Comune di Pozzuoli

- **Improcedibilità della proposta di revisione del PUA**

- **Disponibilità dell'amministrazione comunale di Pozzuoli a valutare ulteriori diverse ipotesi di revisione del PUA approvato, sempre in conformità alle prescrizioni del PTP e del conforme PRG.**

Sintesi motivazioni dell'improcedibilità:

- La disciplina paesistica e urbanistica vigente per il Comune di Pozzuoli, come approvata nel 1999 e nel 2002, pur ammettendo rispettivamente per la zona «ART – Area di Ricerca Tecnologica» e per la zona «D2 – Industriale di Riconversione» la riconversione produttiva per le aree e le volumetrie dismesse mediante interventi di ristrutturazione edilizia e urbanistica, ha escluso ipotesi progettuali che prevedano aumento del carico urbanistico in termini residenziali, mediante l'introduzione della cd «decompressione abitativa» (di cui al PRG vigente), da cui discende l'evidente chiara conseguenza della non ammissibilità di insediamenti residenziali per civili abitazioni, previsti nella proposta di variante in oggetto;

- Il comma 4 dell'art. 26 della LR 16/2004 recante: «L'adozione delle modifiche di cui al comma 3 è motivata dal comune, al fine di dimostrare i miglioramenti conseguibili e in ogni caso l'assenza di incremento del carico urbanistico» esclude chiaramente, in caso di incremento di carico urbanistico, l'auspicato regime derogatorio di cui al comma 3, lett. F), dell'art. 26 della LR 16/2004, qualificando univocamente, di contro, la proposta in oggetto come variante urbanistica al PRG, non conseguibile mediante PUA, proprio ai sensi del comma 3, art.26, della LR 16/2004;

- Le invocate disposizioni della LR 19/2009 non trovano altresì applicazione, ai sensi del comma 1 dell'art. 3 – Casi di esclusione – della stessa LR 19/2009, recante: ''Gli interventi edilizi di cui agli articoli 5,5,6-bis e 7 non possono essere realizzati su edifici..... F) collocati all'interno delle aree (...), dichiarate a pericolosità geomorfologica elevata o molto elevata, dai piani di bacino (...) o dalle indagini geologiche allegate agli strumenti di pianificazione territoriale, agli atti di governo del territorio o agli strumenti urbanistici generali dei comuni'', come nel caso dell'area in esame.

Fonte: Delibera n. 86 del 21 Luglio 2016. Giunta Comunale – Comune di Pozzuoli

Osservazioni presentate nella Delibera n.86 del 21 Luglio 2016 dalla Giunta Comunale

- Il territorio in oggetto è classificato ad elevato rischio sismico e bradisismico ed è perimetrato all'interno della cd ''zona rossa'' dal Piano Nazionale di Emergenza per i Campi Flegrei, che vede le aree epicentrali dei potenziali fenomeni eruttivi concentrate proprio nelle porzioni di territorio comprese tra la fascia costiera, zona ex Sofer e l'area della Solfatara sino all'area Agnano-Pisciarelli;

- L'intero territorio del Comune di Pozzuoli per le sue rilevanti valenze naturalistico-ambientali, paesaggistiche e storico-archeologiche è stato dichiarato, fin dal 1957, di notevole interesse pubblico, giusto DM – Pubblica Istruzione – 15 Settembre 1957 e, per effetto, vincolato paesisticamente, nella sua totale dimensione territoriale, ai sensi della L.29 giugno 1939, n.1497;

- Esistenza delle previsioni del PTP dei Campi Flegrei con le conformi disposizioni del PRG , finalizzate al generale contenimento della capacità insediativa e, più specificamente, alla decompressione abitativa della parte centrale del territorio. Tali disposizioni afferiscono ad un'area di rilevante interesse pubblico nella quale i legittimi interessi privati vanno opportunamente ponderati, dagli organismi istituzionalmente competenti, alla luce delle vigenti norme e discipline specialistiche e di settore, quali appunto quelle del PTP e del PRG, piuttosto che alle sole disposizioni derogatorie e temporanee, assunte d'urgenza, in virtù di congiunture più o meno cicliche e transitorie, come nel caso della disciplina recata alla LR 19/2009 «Misure urgenti per il rilancio economico, per la riqualificazione del patrimonio esistente, per la prevenzione del rischio sismico e per la semplificazione amministrativa» (cd Piano Casa).

- «La Regione Campania mediante la Legge Regionale (LR 19/2009) ha introdotto un regime derogatorio in materia urbanistico-edilizia con validità a ''tempo determinato'', benché annualmente prorogato, che dal 2011 si estende, ai sensi dell'art. 12 bis della Legge Regionale n. 19/2009, progressivamente fino a trovare applicazione anche in aree sottoposte a vincolo paesaggistico, senza peraltro che ciò comporti l'automatica possibilità di deroga a detto vincolo».

- In ogni caso, l'applicazione del suddetto art. 12 bis, nei casi di ammissibilità, va comunque sempre valutata in riferimento alla compatibilità paesaggistica degli interventi proposti, rispetto alle disposizioni recate dai rispettivi strumenti vigenti, PTP e PUT, che conservano vigenza e rilevanza.

- La proposta di revisione del PUA prevede la variazione del PUA approvato mediante l'inserimento di una consistente quota di edilizia residenziale privata e della corrispondente quota di edilizia in social housing prevista dall'art. 7, comma V, della L.R. 19/2209, in contrasto con le disposizioni del PTP e del PRG vigenti.

Fonte: Delibera n. 86 del 21 Luglio 2016. Giunta Comunale – Comune di Pozzuoli

Osservazioni presentate nella Delibera n.86 dalla Giunta Comunale

- Lo stesso PUA è stato dichiarato non assoggettabile alla procedura di Valutazione Ambientale Strategica (VAS) impedendo la prevista fase di partecipazione al procedimento dei portatori di interessi diffusi, prevista dalla procedura di VAS.

- L'atto denominato «Istanza di Definizione del Procedimento di Variante del PUA» denuncia già dal titolo che la proposta della società Waterfront Flegreo SPA si qualifica quale variante urbanistica al Piano Urbanistico Attuativo approvato, in evidente contrasto con la disciplina recata dal comma 3, art. 26, della LR 16/2004.
  I procedimenti di variante agli strumenti urbanistici generali e attuativi non formano oggetto della legge regionale n. 19/2009.

- Gli studi geologici allegati al Piano Territoriale Regionale (PTR), all'adottato Piano Territoriale di Coordinamento Provinciale (PTCP), in uno con le indagini geologiche allegate al Piano Nazionale per l'Emergenza per i Campi Flegrei, come aggiornato nel 2002 dal Dipartimento Nazionale della Protezione Civile, nonché alle indagini geologiche allegate al PRG vigente del Comune di Pozzuoli, escludono chiaramente l'applicabilità delle disposizioni di cui alla LR 19/2009 agli edifici ricadenti nell'area in questione, ai sensi del comma 1, lett. F) dell'art. 3 della LR 19/2009 e ss.mm. E ii.

- La disciplina paesistica ed urbanistica vigente per il Comune di Pozzuoli, come approvata nel 1999 e nel 2002, pur ammettendo rispettivamente per la zona 2°.R.T. – Area di Ricerca Tecnologica'' e per la zona ''D2 – Industriale di Riconversione'' la riconversione produttiva per le aree e le volumetrie dismesse mediante interventi di ristrutturazione edilizia e urbanistica, ha escluso ipotesi progettuali che prevedano aumento del carico urbanistico in termini residenziali mediante l'introduzione dei principi del generale contenimento della capacità insediativa e della c.d. «decompressione abitativa», da cui discende l'evidente chiara conseguenza della non ammissibilità di insediamenti residenziali per civili abitazioni, previsti nella proposta di variante.

Fonte: Delibera n. 86 del 21 Luglio 2016. Giunta Comunale – Comune di Pozzuoli

PUNTI DI FORZA (strenghts)

- Presenza di patrimonio culturale e naturale di rilevanza
- Realizzazione di opere pubbliche volte al miglioramento della rete infrastrutturale (es. tunnel di collegamento tra porto e tangenziale ex Legge 887/84)
- Risorse economiche e fondi europei per la valorizzazione del patrimonio culturale e il risanamento urbanistico (PIU Europa)
- Risorse economiche e fondi europei per il risanamento ambientale (Grandi laghi)
- Crescente interesse verso il turismo culturale (grazie anche al risanamento del Rione Terra)

PUNTI DI DEBOLEZZA (weaknesses)

- Degrado derivante dal fenomeno dell'abusivismo edilizio anni '70-'80-'90 e ritardata valorizzazione del patrimonio culturale
- Insufficienza strutture turistiche e turistico-ricettive
- Limitata possibilità realizzativa di attrezzature e spazi pubblici (per carenza di spazio)
- Situazione di insicurezza a causa delle particolarità del territorio (fenomeno del bradisismo)
- Limitata efficienza di collegamenti per il trasporto collettivo (su gomma e su ferro)

OPPORTUNITA' (opportunities)

- Inserimento nel Parco Archeologico dell'Area Flegrea
- Inserimento nel Parco Naturale Regionale dei Campi Flegrei
- Risorse turistiche legate alla balneazione e alle attività velistiche (litorale flegreo-domizio)
- Valorizzazione e potenziamento del porto commerciale e diportistico napoletano e flegreo

MINACCE (threats)

- Inadeguatezza del sistema normativo nel settore edilizio con riferimento al fenomeno del bradisismo
- Mancata valorizzazione dei reperti archeologici e dei monumenti da parte dei soggetti competenti
- Generale inquadramento dell'area in un contesto ad elevato rischio vulcanico e bradisismico.

1. Adeguatezza della perimetrazione dell'area di studio

2. Individuazione delle criticità e potenzialità dell'area di studio

3. Obiettivi e strategie di valorizzazione e sviluppo

4. Azioni e proposte di intervento

5. Attori coinvolti e possibili partenariati

DOSSIER

POZZUOLI

QUALE FUTURO PER L'AREA EX SOFER?

a cura di: Arch. Francesca Nocca

Annex C

Pozzuoli analysis: statistical indicators

(1) Tourism and Recreation

Cod	Indicator	Unit measure	Data	Year	Reference
TUR1	Number of hotels and complementary exercises	n. (absolute value)	29	2010	www.postmetropoli.it (PRIN)
TUR2	Accommodation: total beds	n. (absolute value)	4222	2010	www.postmetropoli.it (PRIN)
TUR3	*Tourist traffic in hotels and non-hotel* exercises				
TUR3a	N. of Italian tourists - arrivals	n. (absolute value)	58269	2011	Provincial Body for Tourism in Naples
TUR3b	N. of Italian tourists - attendance	n. (absolute value)	108128	2011	Provincial Body for Tourism in Naples
TUR3c	N. of foreigners - arrivals	n. (absolute value)	26491	2011	Provincial Body for Tourism in Naples
TUR3d	N. of foreigners - attendance	n. (absolute value)	56446	2011	Provincial Body for Tourism in Naples
TUR3e	Total arrivals	n. (absolute value)	84760	2011	Provincial Body for Tourism in Naples
TUR3f	Total departures	n. (absolute value)	164574	2011	Provincial Body for Tourism in Naples
TUR4	Capacity of hotel accommodation exercises on the basis of tourist districts	n. (absolute value)	29	2009	Campania Region, 2009
TUR5	Non-hotel accommodation supply on the basis of tourist districts	beds (absolute value)	1,548	2009	Campania Region, 2009
TUR6	*Non-hotel accommodation supply*			2009	Campania Region, 2009
TUR6a	Camping and touristic village	n. (absolute value)	4	2009	Campania Region, 2009
TUR6b		beds (absolute value)	2566	2009	Campania Region, 2009
TUR6c	Accommodations for rent	n. (absolute value))	4	2009	Campania Region, 2009
TUR6d		beds (absolute value)	41	2009	Campania Region, 2009
TUR6e	Farm holiday and CountryHouses	n. (absolute value)	4	2009	Campania Region, 2009
TUR6f		beds (absolute value)	24	2009	Campania Region, 2009
TUR6g	Youth Hostels	n. (absolute value)	0	2009	Campania Region, 2009
TUR6h		beds (absolute value)	0	2009	Campania Region, 2009
TUR6i	Bed & Breakfast Total	n. (absolute value)	10	2009	Campania Region, 2009

TUR6l		beds (absolute value)	43	2009	Campania Region, 2009
TUR6m	Total	n. (absolute value)	22	2009	Campania Region, 2009
TUR6n		beds (absolute value)	2674	2009	Campania Region, 2009
TUR7	*Number of visitors*				
TUR7a	N. of visitors to Archaeological Park of Cuma (Visits by ticket)	n./year	31805	2015	MiBACT
TUR7b	N. of visitors to Flavian Amphitheater and Temple of Serapis (Visits by ticket)	n./year	27141	2015	MiBACT
TUR7c	N. of visitors to Solfatara (including free entries)	n./year	76.008	2008	Provincial Body for Tourism in Naples
TUR7d	N. of visitors to museums	n./year	26.878	2007	MiBACT
TUR8	*Number of active enterprises by type of activity*				
TUR8a	N. Food service activities	n. (absolute value)	397	2011	ISTAT, 2011 – Industrial and services census
TUR9	*Number of local units of active companies*				
TUR9a	N. of hotels and similar facilities	n. (absolute value)	21	2011	ISTAT, 2011 – Industrial and services census
TUR10	N. of holiday accommodation and other short-stay accommodation	n. (absolute value)	10	2011	ISTAT, 2011 – Industrial and services census
TUR11	N. of restaurants	n. (absolute value)	277	2011	ISTAT, 2011 – Industrial and services census
TUR12	N. of bars and other similar exercises without kitchen	n. (absolute value)	149	2011	ISTAT, 2011 – Industrial and services census
TUR13	N. of passengers on the whole of the navigation (port – disembarkation)	n. (absolute value)	816000	2014	Report on Transport and Telecommunications, ISTAT, 2015; Federalberghi, 2015
TUR14	N. of passengers on the whole of the navigation (port – boarding)	n. (absolute value)	778000	2014	Report on Transport and Telecommunications, ISTAT, 2015; Federalberghi, 2015
TUR15	Total of passengers on the whole of the navigation (disembarkation and boarding)	n. (absolute value)	1 594 000	2014	Report on Transport and Telecommunications, ISTAT, 2015; Federalberghi, 2015

(2) Creative, cultural and innovative activities

Cod	Indicator	Unit measure	Data	Year	Reference
CA1	*Number of active enterprises by type of activity*				
CA1a	Creative, arts and entertainment activities	n. (absolute value)	17	2011	ISTAT, 2011 – Industrial and services census
CA1b	Libraries, archives, museums and other cultural activities	n. (absolute value)	3	2011	ISTAT, 2011 – Industrial and services census
CA1c	Sports and fun activities	n. (absolute value)	35	2011	ISTAT, 2011 – Industrial and services census
CA2	*Number of local units of active companies*				
CA2a	Creative and arts activities	n. (absolute value)	17	2011	ISTAT, 2011 – Industrial and services census
CA2b	Libraries, archives, museums and other cultural activities	n. (absolute value)	3	2011	ISTAT, 2011 – Industrial and services census
CA2c	Sports activities	n. (absolute value)	12	2011	ISTAT, 2011 – Industrial and services census
CA2d	Recreation and entertainment activities	n. (absolute value)	30	2011	ISTAT, 2011 – Industrial and services census

(3) Typical local productions

Cod	Indicator	Unit measure	Data	Year	Reference
LP1	Number of educational farms	n. (absolute value)	10	4/12/2016	Campania Region - Regional Register of Educational farms
LP2	Number of farms	n. (absolute value)	283	2010	www.geostatistica.regione.campania.it
LP3	Number of wine-producing companies	n. (absolute value)	283	2011	ISTAT, 2011 – Industrial and services census

(4) Environment and Natural Capital

Cod.	Indicator	Unit measure	Data	Year	Reference
NC1	Number of cars in relation to the resident population, per 1000 inhabitants	kg/inhab./year n. (absolute value)	(617 out of 1000 inhab.) 50371	2015	www.comuni-italiani.it
NC2	Number of bus in relation to the resident population, per 1000 inhabitants	n. (absolute value)	172	2015	www.comuni-italiani.it
NC4	Per capita production of municipal waste	kg/inhab./year	587,26	2012	www.postmetropoli.it (PRIN)
NC5	Percentage of recycling municipal waste	%	38,4	2012	www.postmetropoli.it (PRIN)

(5) Community and Social Cohesion

Cod	Indicator	Unit measure	Data	Year	Reference
SC	*NON PROFIT*				
SC1	Number of non-profit active units	n. (absolute value)	127	2011	ISTAT, 2011 – Industrial and services census
SC2	Number of employees in non-profit units	n. (absolute value)	52	2011	ISTAT, 2011 – Industrial and services census
SC3	Number of temporary workers in non-profit units	n. (absolute value)	116	2011	ISTAT, 2011 – Industrial and services census
SC4	Number of external workers in non-profit units	n. (absolute value)	1	2011	ISTAT, 2011 – Industrial and services census
SC5	Number of volunteers in non-profit units	n. (absolute value)	1 310	2011	ISTAT, 2011 – Industrial and services census
SC6	Outflow of active non-profit institutions	€	7 050 625	2011	ISTAT, 2011 – Industrial and services census
SC7	*Number non-profit active units by type*				
SC7a	Social cooperatives	n. (absolute value)	4	2011	ISTAT, 2011 – Industrial and services census
SC7b	Recognized Association	n. (absolute value)	24	2011	ISTAT, 2011 – Industrial and

					services census
SC7c	Foundation	n. (absolute value)	1	2011	ISTAT, 2011 – Industrial and services census
SC7e	Unrecognized association	n. (absolute value)	92	2011	ISTAT, 2011 – Industrial and services census
SC7f	Other non-profit institutions	n. (absolute value)	6	2011	ISTAT, 2011 – Industrial and services census
SC8	*Number of non-profit active units by field of interest*				
SC8a	Culture, sports and recreation	n. (absolute value)	86	2011	ISTAT, 2011 – Industrial and services census
SC8b	Research	n. (absolute value)	1	2011	ISTAT, 2011 – Industrial and services census
SC8c	Social assistance and civil protection	n. (absolute value)	15	2011	ISTAT, 2011 – Industrial and services census
SC8d	Economic development and social cohesion	n. (absolute value)	2	2011	ISTAT, 2011 – Industrial and services census
SC9	*Number of non-profit active units by form of funding*				
SC9a	Culture, sports and recreation - public financing	n. (absolute value)	3	2011	ISTAT, 2011 – Industrial and services census
SC9b	Culture, sports and recreation - private financing	n. (absolute value)	83	2011	ISTAT, 2011 – Industrial and services census
SC9c	*Social assistance and civil protection - public financing*	n. (absolute value)	5	2011	ISTAT, 2011 – Industrial and services census
SC9d	*Social assistance and civil protection – private financing*	n. (absolute value)	10	2011	ISTAT, 2011 – Industrial and services census
SC9e	Economic development and social cohesion - public financing	n. (absolute value)	0	2011	ISTAT, 2011 – Industrial and services census
SC9f	Economic development and social cohesion - private financing	n. (absolute value)	2	2011	ISTAT, 2011 – Industrial and services census
SC10	*Earnings and outflows of the active non-profit units (Culture, Sports and Recreation)*				
SC10a	Earnings of active profit institutions	euro/year	4 795 121	2011	ISTAT, 2011 – Industrial and services census
SC10b	Outflows of active profit institutions	euro/year	4 730 665	2011	ISTAT, 2011 – Industrial and

					services census
SC11	*Economic development and social cohesion*				
SC11a	Inflows of income of active non-profit institutions	euro/year	42 651	2011	ISTAT, 2011 – Industrial and services census
SC11b	Outflows of income of active non-profit institutions	euro/year	35 871	2011	ISTAT, 2011 – Industrial and services census
SC12	Number of active non-profit institutions for care of the commons	n. (absolute value)	19	2011	ISTAT, 2011 – Industrial and services census
SC13	*Mode of fundraising of non-profit institutions*	n. (absolute value)			
SC13a	Mass media	n. (absolute value)	0	2011	ISTAT, 2011 – Industrial and services census
SC13b	Internet	n. (absolute value)	3	2011	ISTAT, 2011 – Industrial and services census
SC13c	Events and/or public events	n. (absolute value)	15	2011	ISTAT, 2011 – Industrial and services census
SC13d	Sale of goods and products	n. (absolute value)	4	2011	ISTAT, 2011 – Industrial and services census
SC13e	Direct contact	n. (absolute value)	14	2011	ISTAT, 2011 – Industrial and services census
SC13f	Another type of fundraising	n. (absolute value)	2	2011	ISTAT, 2011 – Industrial and services census
SC13g	No fundraising	n. (absolute value)	101	2011	ISTAT, 2011 – Industrial and services census
SC14	Number associations for social promotion - Third Sector, sport, leisure, civil service	n. (absolute value)	7	31/12/2014	Decreto Dirigenziale n. 30 del 16/02/2015
SC15	Propensity to cooperate Index (Density of project cooperation)	Index by formula	3,28	2011	www.postmetropoli.it (PRIN)

(6) Real estate

Cod	Indicator	Unit measure	Data	Year	Reference
RE1	Market value of housing - normal state of conservation - central/coastal zone	€/sqm	min. 2200 - max 3300	2016	Revenue Agency, Real Estate Market Observatory (OMI)
RE2	Rent value of housing - normal state of conservation - central/coastal zone	€/sqm/month	min. 5,5 - max 8,3	2016	Revenue Agency, Real Estate Market Observatory (OMI)
RE3	Market value of housing - normal state of conservation - port area- rione terra - villa Avellino - back rail line	€/sqm	min. 2100 - max 3200	2016	Revenue Agency, Real Estate Market Observatory (OMI)
RE4	Rent value of housing - normal state of conservation - port area- rione terra - villa Avellino -back rail line	€/sqm/month	min. 5,3 - max 8	2016	Revenue Agency, Real Estate Market Observatory (OMI)
RE5	Market value of housing - normal state of conservation - Central area/amphitheater	€/sqm	min. 2050 - max 3100	2016	Revenue Agency, Real Estate Market Observatory (OMI)
RE6	Rent value of housing - normal state of conservation - Central area/amphitheater	€/sqm/month	min. 5,1 - max 7,8	2016	Revenue Agency, Real Estate Market Observatory (OMI)
RE7	Number of housing - housing occupied by residents	n. (absolute value)	26 454	2011	ISTAT, 2011 - Population and housing census
RE8	Number of housing - residential buildings (all ages construction since 1918)	n. (absolute value)	31 542	2011	ISTAT, 2011 - Population and housing census
RE9	Number of other types of accommodation occupied by residents	n. (absolute value)	146	2011	ISTAT, 2011 - Population and housing census
RE10	Number of used buildings	n. (absolute value)	9 951	2011	ISTAT, 2011 - Population and housing census
RE11	Number of non-used buildings	n. (absolute value)	144	2011	ISTAT, 2011 - Population and housing census
RE12	Total number of buildings	n. (absolute value)	10095	2011	ISTAT, 2011 - Population and housing census
RE13	Number of residential buildings	n. (absolute value)	7187	2011	ISTAT, 2011 - Population and housing census
RE14	Consistency of historical occupied dwellings		2,9	2011	8milacensus ISTAT, 2011

RE15	Expansion Building Index in city centers and settlements	%	1,2	2011	8milacensus ISTAT, 2011
RE16	Incidence of housing in properties	%	47,0	2011	8milacensus ISTAT, 2011
RE17	Average area of occupied housing		84,9	2011	8milacensus ISTAT, 2011
RE18	Index of availability of services in the home	%	99,4	2011	8milacensus ISTAT, 2011
RE19	Housing Underutilization Index	%	14,3	2011	8milacensus ISTAT, 2011
RE20	Number of active enterprises by type of activity: Real estate activities	n.	93	2011	ISTAT, 2011 – Industrial and services census
RE21	Residential attractiveness Index	Index by formula	0,01	2001-2011	www.postmetropoli.it (PRIN)

(7) Financial return

Cod	Indicator	Unit measure	Data	Year	Reference
FIN1	Receipts from the tourist tax	€/person	3,00 €/person	2016	www.expedia.it www.hotels.it

(8) Welfare/wellbeing

cod	Indicator	Unit measure	Data	Year	Reference
WB1	Average taxable income per capita	€	17.307,01	2013	sole24Ore (year 2013)
WB2	Employment rate	%	32,13	2011	8milacensus; ISTAT, 2011 - Population census
WB3	Foreign employment rate	%	56,7		8milacensus; ISTAT, 2011 -

					Population census
WB4	Unemployment rate	%	30,69	2011	8milacensus; ISTAT, 2011 - Population census
WB5	Youth Unemployment rate	%	71,17	2011	8milacensus; ISTAT, 2011 - Population census
WB6	*Resident population that commutes daily*				
WB6a	For study reason	n. (absolute value)	15819	2011	ISTAT, 2011 - Population census
WB6b	For work reason	n. (absolute value)	18305	2011	ISTAT, 2011 - Population census
WB6c	Total	n. (absolute value)	34124	2011	ISTAT, 2011 - Population census
WB7	Index of independence	Index by formula	0,4	2011	www.postmetropoli.it (PRIN)
WB8	Exclusion Index or housing emergency	Index by formula	5,52	2001-2011	www.postmetropoli.it (PRIN)
WB9	Changes in the index of exclusion or housing emergency	%	4	2001-2011	www.postmetropoli.it (PRIN)
WB10	*Number of active enterprises by type of activity*				
WB10a	Services and social care	n. (absolute value)	265	2011	ISTAT, 2011- Industrial census
WB11	Incidence of households with economic potential hardship	%	10,0	2011	8milacensus; ISTAT, 2011
WB12	Incidence in the population status of crowding	%	5,0	2011	8milacensus; ISTAT, 2011
WB13	Incidence of young people out of the labor market and training	%	19,0	2011	8milacensus; ISTAT, 2011
WB14	Incidence of families in hardship assistance	%	1,5	2011	8milacensus; ISTAT, 2011
WB15	*Number of employees in local units of active companies*	n. (absolute value)	15673	2011	ISTAT, 2011 – Industrial and services census
WB15a	N. of employees in hotels and similar facilities	n. (absolute value)	124	2011	ISTAT, 2011 – Industrial and services census
WB15b	N. of employees in holiday accommodation and other short-stay accommodation	n. (absolute value)	15	2011	ISTAT, 2011 – Industrial and services census
WB15c	N. of employees in restaurants	n. (absolute value)	893	2011	ISTAT, 2011 – Industrial and services census
WB15d	N. of employees bars and other similar exercises without kitchen	n. (absolute value)	384	2011	ISTAT, 2011 – Industrial and services census

WB15e	N. of employees in trade, hotels and restaurants	n. (absolute value)	4198	2011	ISTAT, 2011 – Population and housing census
WB16	Percentage of employees to total employees: accommodation and catering services activities	%	9,37	2011	www.postmetropoli.it (PRIN)
WB17	*Number of employees in local units of active companies*				
WB17a	Creative and arts activities	n. (absolute value)	25	2011	ISTAT, 2011 – Industrial and services census
WB17b	Libraries, archives, museums and other cultural activities	n. (absolute value)	11	2011	ISTAT, 2011 – Industrial and services census
WB17c	Sports activities	n. (absolute value)	8	2011	ISTAT, 2011 – Industrial and services census
WB17d	Recreation and entertainment activities	n. (absolute value)	43	2011	ISTAT, 2011 – Industrial and services census
WB18	Percentage of employees by sector in the total number of employees: arts, sports, entertainment and ricreative activities	%	0,96	2011	www.postmetropoli.it (PRIN)

(9) Cultural Value

Cod	Indicator	Unit measure	Data	Year	Reference
CV1	Incidence of the buildings in good condition	%	94,0	2011	8milacensus; ISTAT, 2011
CV2	Incidenza degli edifici in pessimo stato di conservazione	%	0,3	2011	8milacensus; ISTAT, 2011
CV3	Incidence of buildings in poor condition	%	1,4	2011	8milacensus; ISTAT, 2011
CV4	Potential residential use in the residential areas	%	15,7	2011	8milacensus; ISTAT, 2011
CV5	Potential residential use in housing unit and scattered houses	%	25,9	2011	8milacensus; ISTAT, 2011
CV6	Incidence of improper accommodation	%	0,5	2011	8milacensus; ISTAT, 2011

Annex D

Questionnaire

LINEE STRATEGICHE PER LO SVILUPPO DELLA LINEA DI COSTA DI POZZUOLI

Obiettivo del questionario è comprendere il grado di soddisfazione e percezione di alcune questioni relative alla città di Pozzuoli, al fine di delineare possibili strategie di sviluppo dell'area oggetto dell'intervento.

In particolare, il progetto pone la sua attenzione sull'area occupata dagli impianti **dell'ex stabilimento Sofer di Pozzuoli**, sito in Via Fasano.

Il progetto per la riqualificazione/rigenerazione/valorizzazione di tale area rappresenta un'occasione unica per Pozzuoli, un'opportunità strategica di primaria importanza per il rilancio dell'economia della città. Tale intervento mira a riconnettere la fascia costiera con il tessuto urbano, restituendola ai cittadini.

Ritrovando il suo naturale sbocco sul mare, Pozzuoli può tornare ad essere centro di confronto e scambio tra la produttività campana e il Mediterraneo, luogo di accoglienza turistica e centro di cultura.

L'area dell'ex stabilimento, pur rappresentando il cuore del progetto, non può prescindere dal contesto urbano in cui è situato, contesto caratterizzato da forti presenze, quali il **porto** e il **reticolo di beni culturali** che, sviluppandosi attorno ad esso, caratterizza la città di Pozzuoli.

La riconquista non solo del rapporto con il mare, ma anche del rapporto con la città antica sommersa (testimone della lunga storia portuale della città), il potenziamento del porto, l'ottimizzazione della rete di accesso ai beni archeologici e culturali, e ancora il completamento del recupero del centro antico, contribuiranno a sviluppare e consolidare nel tempo il ruolo strategico della città di Pozzuoli.

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1. Esprima il suo grado di soddisfazione relativo alle seguenti questioni:

	BASSO	MEDIO-BASSO	MEDIO	MEDIO-ALTO	ALTO
Patrimonio culturale - Stato di conservazione					
Patrimonio culturale - Fruibilità					

	BASSO	MEDIO-BASSO	MEDIO	MEDIO-ALTO	ALTO
Qualità del Paesaggio Urbano					

	BASSO	MEDIO-BASSO	MEDIO	MEDIO-ALTO	ALTO
Efficienza dei trasporti					

	BASSO	MEDIO-BASSO	MEDIO	MEDIO-ALTO	ALTO
Attrezzature e spazi pubblici (parchi, piazze,…) - Offerta					
Attrezzature e spazi pubblici (parchi, piazze,…) -Fruibilità					

	BASSO	MEDIO-BASSO	MEDIO	MEDIO-ALTO	ALTO
Attività economiche e servizi -Offerta					

	BASSO	MEDIO-BASSO	MEDIO	MEDIO-ALTO	ALTO
Sicurezza -Percezione del rischio sismico e bradisismico					
Sicurezza -Percezione di sicurezza connessa all'uso degli spazi collettivi					

	BASSO	MEDIO-BASSO	MEDIO	MEDIO-ALTO	ALTO
Relazione mare-città -Rapporto visivo					
Relazione mare-città -Connessione					

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2. Quali delle seguenti funzioni ritiene più adeguata per la riqualificazione dell'area Ex Sofer? Esprima il grado di adeguatezza per ciascuna di esse.

FUNZIONE	GRADO DI ADEGUATEZZA				
	BASSO	MEDIO-BASSO	MEDIO	MEDIO-ALTO	ALTO
Residenziale					
Produttiva (industrie, laboratori artigiani, ecc.)					
Turistico-ricettiva (Alberghi, residenze turistiche, ecc.)					
Commerciale (negozi di vicinato, media distribuzione, attività commerciale di grande distribuzione, ecc.)					
Direzionale (banche, assicurazioni, sedi preposti alla direzione ed organizzazione di enti e società fornitrici di servizi, uffici privati, studi professionali, ecc.)					
Polo scientifico e tecnologico (attività di ricerca, ecc.)					
Parco pubblico					
Centro sportivo					
Aree di sosta (parcheggi,..)					
Altro Specificare_____					

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3. Quali sono secondo Lei le questioni che richiedono maggiore priorità di intervento?
Disponga le seguenti questioni in ordine decrescente di priorità di intervento (dalla più importante alla meno importante), attribuendo un numero da 1 (la prima) a 11 (l'ultima).

	PRIORITA'
Patrimonio culturale - Stato di conservazione	
Patrimonio culturale -Fruibilità	
Qualità del Paesaggio Urbano	
Efficienza dei trasporti	
Attrezzature e spazi pubblici (parchi, piazze,…) - Offerta	
Attrezzature e spazi pubblici (parchi, piazze,…) -Fruibilità	
Attività economiche e servizi -Offerta	
Sicurezza -Percezione del rischio sismico e bradisismico	
Sicurezza -Percezione di sicurezza connessa all'uso degli spazi collettivi	
Relazione mare-città -Rapporto visivo	
Relazione mare-città -Connessione	

4. Ritiene ci siano altre questioni da considerare, oltre a quelle sopra individuate?
□ SI □ NO

Se sì, quali? _____

Il Questionario è stato compilato da persona:
Residente in Pozzuoli □ SI □ NO
Professione: _____

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Annex E

Matrix of indicators

MATRIX OF INDICATORS

IMPACT CATEGORIES	INDICATOR CATEGORIES
(1) TOURISM AND RECREATION	Employment in the sector Touristic Demand Touristic Supply Economic Vitality
(2) CREATIVE, CULTURAL and INNOVATIVE ACTIVITIES	Creative Firms Cultural Demand Cultural Supply Employment in cultural activities Impacts of festivals and other events Willingness to Pay of visitors to cultural events / sites
(3) TYPICAL LOCAL PRODUCTIONS	Economic vitality of companies Employment in the sector Market value of products Production of goods
(4) ENVIRONMENT AND NATURAL CAPITAL	Ecosystem preservation Green areas and facilities supply Pollution Reduction Attraction of new investments
(5) COMMUNITY AND SOCIAL COHESION	Social Cohesion Sharing/ Collaborative Economy
(6) REAL ESTATE	Real estate values Real estate supply Real estate development Vacancy rates
(7) WELLBEING	Employment Economic wellbeing Education and training Security Research and innovation Quality of services Housing quality Social care (BES Indicators + OECD Better Life Index)

(8) PUBLIC FINANCIAL RETURN	Real estate Selling Revenue Employment Social Care Environmental Social Cohesion Tourist flow
(9) CULTURAL VALUE OF PROPERTIES/LANDSCAPE	State of Conservation of heritage/landscape asset

TOURISM AND RECREATION INDICATORS

Category	Indicator	Unit of measure
Touristic Demand	N. of visitors per year (or per day)	n./year (or day)
Touristic Demand	N. of visitors staying overnight	n./year
Touristic Demand	N. of tourists per business per day to restaurants, cafes, shops	n./day
Touristic Demand	Visitors' expenditure	€/day; €/year
Touristic Demand	Visitors average length of stay	n.nights/person/year
Touristic Demand	Percentage of tourists on repeat visit to the city	%
Touristic Demand	N. of one-day trips	n./year
Touristic Demand	Occupancy rate of touristic units	%
Touristic Demand	Average growth rate of number of visitors	%
Touristic Demand	Growth rate (or number) of nights spent by tourists	% (or n.)
Touristic Demand	Percentage of crowding in restaurants	%
Touristic Demand	Average number of daily users in stores	n./day
Touristic Demand	Average daily expenditure of users in stores	€/day
Touristic Demand	Average number of daily users in restaurants	n./day
Touristic Demand	Average daily expenditure of users in restaurants	€/day
Touristic Demand	N. of tickets sold for touristic place of interest	n./day (or year)
Touristic Demand	Percentage (or number) of national tourists	% (or n.)
Touristic Demand	Percentage (or number) of international tourists (internationalization)	% (or n.)
Touristic Demand	Number of airline passengers	n./years
Touristic Supply	N. of airlines operating at the airport	n.
Touristic Supply	Percentage of fixed assets related to	%

	the tourism sector	
Touristic Supply	Average annual growth in touristic units and rooms	%
Touristic Supply	N. of new touristic shops	n/year
Touristic Supply	Growth of catering sector	%
Touristic Supply	Percentage of increase in number of guided tours	%
Touristic Supply	N. of hotels/ touristic accommodation	n.
Touristic Supply	N. of hotel rooms	n.
Touristic Supply	N. of hotel beds	n.
Touristic Supply	Average room price	€/day
Touristic Supply	N. of new travel agencies	n.
Touristic Supply	N. of new public underground parking lots	n.
Touristic Supply	Admission price in touristic place of interest	€
Economic value	Average growth of touristic sector	%
Economic value	Total value of tourism sector	€
Economic Vitality	Additional investment for improving/building new touristic units	€
Economic Vitality	Average lifespan of touristic companies	%
Economic Vitality	Percentage of formal/informal activities	%

CREATIVE, CULTURAL AND INNOVATIVE ACTIVITIES

Sub-category	Indicator	Unit of measure
Cultural Demand	Percentage of visitors stay for temporary cultural events	%
Cultural Demand	N. of visitors for cultural reason	n./year
Cultural Demand	N. of participants in cultural events	n./year
Cultural Demand	N. of schoolchildren taking part in the cultural events	n./year
Cultural Demand	N. of visitors to museums	n./day
Cultural Demand	N. of licences granted in retail and services for artisans	n./year
Cultural Supply	N. of cultural events per year	n./year
Cultural Supply	N. of cultural institutions	n.
Cultural Supply	N. of cultural facilities	n.
Cultural Supply	N. of cultural enterprises	n.

Cultural Supply	N. of new start-ups	n.
Cultural Supply	Percentage of citizens satisfied of cultural facilities supply	%
Cultural Supply	Percentage growth rate of cultural events	%
Cultural Supply	Percentage growth rate of creative activities	%
Cultural Supply	N. archives	n.
Cultural Supply	N. libraries	n.
Cultural Supply	N. movie theatres	n.
Cultural Supply	N. art galleries	n.
Cultural Supply	N. museums	n.
Cultural Supply	N. theatres	n.
Cultural Supply	N. artists	n.
Economic Vitality	Attraction of new investments in Cultural Heritage/cultural events	€
Economic Vitality	Additional investment for new cultural programmes	€
Creative Firms	N. of antique stores/second hand bookshops	n.
Economic impact	Economic impact generated by cultural events	€
Employment	N. of artists taking part in cultural activities	n./year

TYPICAL LOCAL PRODUCTION INDICATORS

Sub-category	Indicator	Unit of measure
Employment	N. of artisan units	n./year
Creative Firms	N. of new handcraft shops	n./year
Creative Firms	N. of craft producers	n./year
Creative Firms	N. of craft stores	n./year
Production of Goods	N. of new industrial activities (local production)	n./year
Production of Goods	Annual growth rate of traditional production	%
Production of Goods Typical Productions	Selling price of traditional products (without VAT)	€
Production of Goods	Net present value of economic activity	€
Production of	Internal profit rate of economic activity	%

Goods	related to local production

ENVIRONMENT AND NATURAL CAPITAL

Sub-category	Indicator	Unit of measure
Environment preservation	Attraction of new investments in ecosystem preservation	€/year
Environment preservation	Avoided damages from land preservation	€
Environment preservation	Benefits from preservation of agricultural land (ecosystem services)	€
Environment preservation	Attraction of new investments for enhancement of green areas	€
Environment preservation	Avoided cost of traffic congestion (due to the enhancement of public transport)	€ / year
Environment preservation	Avoided cost of traffic congestion per resident (due to pedestrian and bicycle routes)	€ / year
Environment preservation	N. of automobiles daily entered in the historic center	n./day
Green space supply	Percentage of citizens satisfied of green spaces	%
Pollution Reduction	Attraction of new investment in infrastructure to reduce pollution	€
Pollution Reduction	Amount of raw materials- water, etc. savings	Quant/ year
Pollution Reduction	Reduction of costs related to waste disposal	€/year
Pollution Reduction	Reduction of costs related to natural hazards disaster	€/year

COMMUNITY AND SOCIAL COHESION

Sub-category	Indicator	Unit of measure
Social Cohesion	N. of volunteers	n./year
Social Cohesion	N. of volunteer hours	n./hours
Social Cohesion	N. of events supported by volunteers	n./year
Social Cohesion	New funds to support activities of non-profit organizations	€/year
Social Cohesion	Percentage (or number) of non-profit organization	% (or n.)

Social Cohesion	N. of associations	n. /10000 inhab.
Social Cohesion	N. of social centers	n.
Social cohesion	Donations for cultural heritage	€
Social cohesion	Percentage of citizens considering cultural events national pride reason	%
Sharing/ Collaborative Economy	Municipal Bonds/Crowdfunding incomes for heritage projects	€
Sharing/ Collaborative Economy	N. of new cooperative enterprises	n. /10000 inhab.
Sharing/ Collaborative Economy	N. of participants in crowdfunding initiatives	n.
Sharing/ Collaborative Economy	Amount of money crowdsourced through crowdfunding campaigns	€

REAL ESTATE

Sub-category	Indicator	Unit of measure
Real Estate Values	Average price of properties	€/sqm
Real Estate Values	Percentage of increase in private land/ properties value	%
Real Estate Values	Percentage of increase in value of properties after historic designation	%
Real Estate Values	Percentage of increase in public land/ properties value (due to infrastructure development)	%
Real Estate supply	N.(or %) of residences	n. (or %)
Real Estate supply	N. (or %) of office spaces	n. (or %)
Real Estate supply	N. (or %) of commercial units	n. (or %)
Real Estate Values	Increase in value of surrounding buildings	€/sqm %
Real Estate Values	Rent values for commercial-use properties	€/sqm/month
Real Estate Values	Rent values for residential properties	€/sqm/month
Real Estate Values	Average monthly rent	€/sqm/month
Real Estate Values	Average market value	€/sqm

Real Estate Values	Volume of transactions in the real estate market	€
Real Estate development	N. of new residential units	n./year
Real Estate development	Square feet of commercial development	Sq. feet
Real Estate development	N. of new construction activities and new permits	n./year
Real Estate development	N. of change of use of properties	n./year
Real Estate development	N. of new construction/rehabilitation	n./year
Real Estate development	Percentage of ownership house/commercial units	%
Real Estate development	Percentage of rented house/commercial units	%
Real Estate development	Housing/properties vacancy rate	%

FINANCIAL RETURN

Sub-category	Indicator	Unit of measure
Real Estate	Property taxes gained from commercial development (municipal)	€
Real Estate	Property taxes gained from commercial development (provincial and federal)	€
Real Estate	Increase in municipal taxes	€/year %
Real Estate	Increase in taxes related to real estate assets	€/year %
Real estate	Increase in incomes due to construction permits	€/year %
Real estate	Avoided expenditure for management and maintenance of cultural heritage due to increase in private investments	€
Selling	Increase in earnings due to tickets selling	€/year %
Selling	Increase in earnings due to tourist services selling	€/year %
Tourists flow	Increase in taxes related to tourist flows/ Receipts from the tourist tax	€/year %
Social care	Reduction of costs related to social care	€

Social care	Reduction of costs related to public services	€
Social care	Reduction of costs related to medical expenditure	€
Revenue	Increase in taxes related to activities in each sector (all categories - tourism, real estate, etc.)	€
Revenue	Revenue due to municipal investment	€
Revenue	Total local tax revenues supported by direct expenditures on historic preservation - investments	€
Revenue	Tax revenues from businesses/sales	€
Revenue	Increase in additional regional GDP (by sector)	€/year
Revenue	Civil insurance to be paid from hotel to be formal and legal	€/year
Revenue	Return to local economy for every €1 invested by the regional authorities	€
Employment	Increase in taxes related to new employment in the sector (all categories - tourism, real estate, etc.)	€
Employment	Reduction of costs related to unemployment in the sector (all categories - tourism, real estate, etc.)	€

WELLBEING

Sub-category	Indicator	Unit of measure
Employment	Employment rate	%
Employment	Youth employment rate	%
Employment	Unemployment rate	%
Employment	Youth unemployment rate	%
Employment	N. of businesses in historic center	n./year
Employment	N. of new jobs (temporary or permanent)	n.
Employment	N. of workers	n./year
Employment	Percentage of employed population related to tourism sector	%
Employment	Average number of jobs in touristic activities (hotels, restaurants, shops)	n./year

Employment	Monthly salary	€/month
Employment	Jobs created in the short term in cultural activities	n.
Employment	Employment in activities related to typical local production/distribution	% n.
Employment	Growth of employment within real estate and neighbourhood development	%
Economic well-being	Percentage of hotels' contribution to tourism sector income	%
Economic well-being	Percentage of hotels' contribution to tourism sector total revenues	%
Economic well-being	Average income	€
Economic well-being	Percentage (or n.) of residents in low-income households	% (or n.)
Housing quality	Percentage of people living in homes without toilet of total resident persons	%
Education and training	Percentage of young people attending school	%
Security	N. of murder	n./100000 inhab.
Security	N. of heft in dwelling	n./100000 inhab.
Security	N. of pickpocketing	n./100000 inhab.
Security	N. of robberies	n./100000 inhab.
Security	Perception of personal safety	Qualitative
Security	Percentage of citizens feeling safe in the city	%
Research and innovation	N. of patents	n./100000 inhab.
Research and innovation	Percentage of specialization in knowledge-intensive technological of workers in productive sector (for 100 employees of local units)	n./100 workers
Quality of services	Percentage of citizens satisfied with health services (and other services)	%
Quality of services	Cycle paths	km per 100 km2
Quality of services	Pedestrian areas	sqm/ 100 inhab.
Quality of services	Homes with basic sanitation facilities	N. %
Social Care	Number of individuals receiving social care	n. /10000 inhab.

Social Care	Percentage of citizens agreed that the city is a healthy place to live	%

CULTURAL VALUE OF PROPERTIES/LANDSCAPE

Sub-category	Indicator	Unit of measure
State of conservation	N. of well-preserved buildings	n.
State of conservation	Percentage of well-preserved buildings	%
State of conservation	N. of buildings in poor condition	n.
State of conservation	Percentage of buildings in poor condition	%
State of conservation	N. of buildings in ruin	n.
State of conservation	Percentage of buildings in ruin	%
State of conservation	Percentage/number of improper housing	% n.
State of conservation	Percentage of citizens satisfied of historic buildings quality	%
State of conservation	Percentage of used historic building	%
State of conservation	Percentage of vacant historic building	%
State of conservation	Visitors' Willingness to make a one-time contribution to Heritage Restoration	%
State of conservation	N. of historic properties/district designated to be of cultural heritage value or interest	n.
State of conservation development	N. of restoration and adaptation works undertaken on historic buildings	n./year
State of conservation	Re-functionalization of historic buildings	%

Source: Case studies (see annex A)