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Towards an Integrated Evaluation Approach for Cultural Urban Landscape Conservation/Regeneration

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Abstract. The contemporary economic crisis (and also ecological and social crisis) calls for a new model of urban development. The international debate is today focused on the necessity of a new paradigm (Hosagrahar et al., 2016) that will define sustainable development policies and programmes: this new paradigm moves the concept of development towards a more humanistic and ecological point of view. The recent international debate around Sustainable Development Goals (SDGs) is going to highlight the role of cultural heritage for sustainable development (United Nations 2016, 2015a). Cultural heritage can play a critical role in the achievement of the above mentioned new humanistic and ecological paradigm of sustainable cities. In this paper some indicators to evaluate cultural urban landscape conservation/regeneration projects are identified, starting from case studies. The purpose of the analysis of good practices is to support the elaboration of a multidimensional matrix that can produce empirical evidence about the impacts of cultural urban landscape conservation/regeneration. After a particular focus on the relationship between variation of landscape and variation of wellbeing, this paper will present a methodological proposal to evaluate cultural urban landscape conservation/regeneration projects.

Key words: Cultural Heritage conservation, landscape variation/wellbeing variation, multidimensional indicators

1 Introduction

The contemporary economic crisis (and also ecological and social crisis) calls for a new model of urban development. The international debate is today focused on the necessity of a new paradigm (Hosagrahar et al. 2016) that will define sustainable development policies and programmes: this new paradigm moves the concept of development towards a more humanistic and ecological point of view. The necessity to change towards this more humanistic (suggested in the Agenda 2030 of United Nations) and more ecological (Paris Cop21 and Agenda 2030) paradigm is deeply felt. It is characterized by the human scale of development and is inspired by the wisdom of nature. The 2030 Sustainable Development Agenda has been defined as a plan of action for people, planet and prosperity (United Nations 2015a), based on 17 Sustainable Development Goals (SDGs) and 169 targets coming out from the Millennium Development Goals (MDGs) (United Nations 2015b). Most of these can be achieved in the space of cities. All of the problems, for example

problems related to climate change, energy, water, food or wellbeing, are localized in the cities and thus can be faced in these cities.

The international debate around Sustainable Development Goals (SDGs) recently is highlighting the role of cultural heritage for sustainable development ([United Nations 2015a](#)). Cultural heritage can play a key role in the achievement of the above-mentioned new humanistic and ecological paradigm of the sustainable city. Therefore, cultural resources should be integrated into the sustainable development of cities. “Cultural matters are integral parts of the lives we lead. If development can be seen as an enhancement of our living standards, then efforts geared to development can hardly ignore the world of culture” ([Sen 2000](#)).

Despite the important role that cultural heritage can have in sustainable development and the acknowledgment of its importance at the national level (and not only), it has been kept out of the sustainable development debate for too long. It should be included in the framework of sustainable development because it reflects the mutual adaptation between humans and their environment and the relationship between people and heart. Cultural heritage plays an irreplaceable role as the source of a sense of belonging and identity for communities ([UNESCO 2013](#), [European Commission 2014](#), [CHCfE Consortium 2015](#)). It also reveals and symbolizes how people relate to other communities and what they value to enhance and improve the quality of their life. Cultural heritage is an integral part of communities’ life and it is involved in social, economic and environmental processes. It is an expression of the culture, identity and religious beliefs of societies.

For this reason, all actions aiming to protect and improve the environmental, social and economic wellbeing of communities should take into account cultural heritage, the opportunities that it offers and the threats it poses due to inappropriate use. Despite all of these considerations, Cultural Urban Landscape and, more generally Cultural Heritage (CH), is weakly considered in strategies for achieving sustainable development: it is explicitly mentioned only once in Goal 11 (“make cities and human settlements inclusive, safe, resilient and sustainable”), and particularly in target 11.4, regarding “strengthening efforts to protect and safeguard the world’s cultural and natural heritage”.

The analysis of the relationship between cultural heritage and sustainable development could represent a first step to recognizing the critical role of cultural heritage in the current debate. This relation is highlighted, for example, in the Historic Urban Landscape Approach ([UNESCO 2011](#)) and European Landscape Convention ([European Commission 2014](#)). Both documents recognize the contribution of high quality landscapes to urban productivity. Cultural heritage is increasingly considered as a source of local development thanks to its capacity to produce new employment, to stimulate the localization of creative activities, to increase inclusion and social cohesion ([UNESCO 2013](#), [European Commission 2014](#), [CHCfE Consortium 2015](#)).

The role of culture heritage to achieve a more inclusive, resilient, safe and sustainable city is going to be more and more recognized. Cultural heritage is here understood through a holistic and systemic interpretation of landscape. “Landscape can be interpreted as a complex indicator for the sustainability of a city or territory, of the quality of life, vitality of a place, and a community’s sense of belonging” ([Hosagrahar et al. 2016](#)). This vision is fundamental to operationalize the project. Complexity is related to multidimensionality, heterogeneity and dynamism. It is linked to technical-scientific and humanistic knowledge, to the individual’s perception and how it turns into a community perspective. The subjective perception is here transformed into a community and inter-subjective result through dialogic and participative processes. It is therefore an inter-subjective result.

The answer to the main question, that is if Cultural Urban Landscape can play a role in sustainable development, could be yes only if we are able to produce empirical evidence about the contribution of cultural heritage to improve the 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/regeneration. In order to achieve this goal, empirical evidence needs to be produced. Current studies about empirical evidence are limited to some benefits, in particular the economic ones. However, as [Dalmas et al.](#) highlighted ([Dalmas et al. 2015](#)), the notion of cultural heritage is “inseparable from its

multidimensional nature". For this reason, multidimensional impacts need to be considered. If we want to be convincing about the capacity of cultural heritage to implement the new urban paradigm (Hosagrahar et al. 2016), we have to produce empirical evidence about the multidimensional benefits. There needs to be improved knowledge about the relationship between quality landscape variation and wellbeing variation (it will analyze in the third paragraph). In this new perspective linking landscape and productivity, the complex landscape could be considered as an indicator of the health of a city/region (Fusco Girard 2013). In other words, the aim is to demonstrate the productivity of conservation projects, including how cultural urban landscape conservation/regeneration can contribute to increasing local productivity and also to improving the wellbeing of inhabitants. In this perspective, Cultural Urban Landscape represents a precious resource. This paper would be a first step towards this goal, proposing a specific set of indicators in order to support the demonstration that cultural heritage conservation is an investment and not a cost (because benefits overcome costs). The purpose is to deduce, starting from experiences, a more effective evaluation approach, that can make integrated conservation more effective in implementing human sustainable development strategies (Fusco Girard 2014b). Tools are fundamental, but more important is an understanding of which perspective we want to move towards: the risk is that cities are not being able to achieve the human scale in this evolutionary dynamic.

The most recent operative tool proposed for the impact assessment of different projects on Cultural Heritage (included HUL) is 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 (Pereira Roders et al. 2013). It provides a framework for assessing the impacts of urban transformations on the cultural value of properties. However, it has some remarkable limitations; for example, it does not include the economic and social dimensions of heritage conservation. It is based on expert judgement without considering community perceptions and intangible dimensions that are important factors of Historic Urban Landscape. It is not a multidimensional approach. It considers HUL conservation/regeneration as a mere cultural issue and not as a driver/vehicle for sustainable development. Furthermore, HIA is a tool for the assessment of impacts on Cultural Heritage; we also need tools for the assessment of impacts from Cultural Heritage conservation on city productivity and wellbeing. Therefore, it needs to go beyond HIA, integrating it with the evaluation of impacts from cultural heritage and not only impacts on it, in order to evaluate all multidimensional benefits of HUL conservation/regeneration through an effective approach. We need a systemic approach based on empirical evidence and not only on principles. The challenge is to elaborate an evaluation approach able to make the integrated conservation more effective to achieve human sustainable development. The above-mentioned new perspective of city humanization suggests the steering of this approach towards human and social impacts of cultural heritage conservation/regeneration. In other words, it should be focused on its capacity to produce employment (direct, indirect, induced), social capital (bonds, synergies, etc.), social cohesion, human wellbeing/health thanks to the new attractive atmosphere and also on the capacity of these impacts to implement new value creation chains in a virtuous and self-reproducing spiral in time. Some indicators to evaluate cultural urban landscape conservation/regeneration projects are identified in the following paragraphs, starting from case studies. The purpose of this analysis of good practices is to support the elaboration of a multidimensional matrix that can produce empirical evidence about impacts of cultural urban landscape conservation/regeneration.

After a particular focus on the relationship between variation of landscape and variation of wellbeing, this paper will present a methodological proposal to evaluate cultural urban landscape conservation/regeneration projects.

2 Multidimensional benefits of cultural landscape conservation

In this period in which cities are facing three important challenges (economic, social and environmental crisis), it is important to understand and demonstrate the role that cultural heritage could have in sustainable development. It is important to demonstrate

the capacity of cultural heritage to increase the economic (EVoCH 2012), social and environmental productivity of cities. City productivity is related to the capacity of the city to produce new added values starting from its available resources (rate between output and input). They are not only referred to as the good economic performance of the city, but they include also social and environmental dimensions. Cultural heritage can be considered as an input in this production process that, through the lens of landscape, can contribute to the enhancement of cities economic, social and environmental performance. The capacity to produce multidimensional benefits depends on strategies, policies and actions adopted that, in turn, depend on different aspects (i.e. city size, intensity of bonds and relationships).

In order to pass from principles to their operationalization, we need tools. We need to evaluate investments in cultural heritage in an operative way, deducing indicators starting from empirical evidence: in this paper some indicators, extrapolated from case studies, are proposed in this perspective. Many more indicators can be proposed (Nocca 2017). As empirical evidence shows, culture can boost the economy (CHCfE Consortium 2015). It is able to produce income, employment and new businesses. It can foster entrepreneurship capacity and skills and be a source of creativity and innovation (Fusco Girard 2013). Culture is also linked to the social dimension because it is able, through broadening capacities and increasing opportunities, to face poverty. It can support marginalized people because cultural-based activities can, for example, provide people with opportunities.

The indicators are grouped into 6 categories (each of them divided into sub-categories) (Fusco Girard et al. 2015, Nocca et al. 2016):

- Tourism and recreation
- Creative and cultural activities
- Environment and natural capital
- Community and social cohesion
- Real estate
- wellbeing

The set of indicators for each category has been extracted from 17 case studies of cities from all over the world – 9 in Europe, 3 in Africa, 3 in South America, 1 in North America and 1 in the Middle East (Fusco Girard et al. 2015). The first category is about tourism and recreation (Table 1). The indicators about this category are the most popular because the impacts related to the tourism sector are more immediate and obvious, especially in the short term (D'Auria 2009). It is a sector able to transform cultural values into economic ones. It produces new employment and new wealth in the short time. There are many good practices that empirically demonstrate the benefits in the tourism sector, in terms of hotels, restaurants, visitors, etc.

Tourism refers, in particular, to the instrumental value of cultural heritage, but the latter has also intrinsic and social value (Fusco Girard 1987). The first one can be a source of shared identity and a sense of belonging or meaning etc., in other words, of heritage community. It is not linked to the use or function that it serves; it bonds community to places “determining the spirit of a place and the source of pride that is of interest for future generations”. Social value refers 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 value chains, which increase city productivity through circular processes, synergies and symbiosis (Fusco Girard 2014a). All of the above values are able to increase (in a direct or indirect way) the comprehensive productivity and thus prosperity of a city.

Cultural heritage regeneration could have negative impacts, such as the museification and gentrification of historic centres (Glass 1964). Development/transformation generates some interferences with landscapes. Overdevelopment often represents a cost to landscapes. Without proper measures, regeneration/valorization actions can produce negative

Table 1: Tourism and recreation indicators

Sub-category	Indicator	Unit measure
Employment	N. of new jobs in touristic sector	n./year
Employment	% of employed population related to tourism sector	%
Employment	% of the total workforce employed in hotels	%
Employment	Average number of jobs in touristic activities (hotels, restaurants, shops)	n./year (or day, week, month)
Employment	Monthly salary	€/month
Employment	% of hotels' contribution to tourism sector income	%
Employment	% of hotels' contribution to tourism sector total revenues	%
Touristic Demand	N. of visitors per year (or per day)	n./year (or day)
Touristic Demand	Visitors' expenditure per day (or per year)	€/day (or year)
Touristic Demand	Average length of stay	nights/person
Touristic Demand	Occupancy rate of touristic units	%
Touristic Demand	Average growth rate of number of nights and guests	%
Touristic Demand	% of international tourists	%
Touristic Demand	N. of one-day trips	n. trips/year
Touristic Demand	% of crowding in restaurants during holidays	%
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 airline passengers	n./years
Touristic Demand	N. of visitors to museums	n./day
Touristic Supply	% of fixed assets related to the tourism sector	%
Touristic Supply	Average annual growth in touristic units and rooms	%
Touristic Supply	Average growth of touristic sector	%
Touristic Supply	N. of new touristic shops	n/year
Touristic Supply	N. of touristic residences in rural space	n. units/year
Touristic Supply	Growth of service and infrastructures	%
Touristic Supply	Growth of catering sector	%
Touristic Supply	N. of hotels	n.
Touristic Supply	N. of hotel rooms	n.
Touristic Supply	N. of hotel beds	n.
Touristic Supply	N. of new travel agencies	n.
Touristic Supply	N. of airlines operating at the airport	n.
Touristic Supply	N. of new public underground parking lots	n.
Touristic Supply	N. of commercial licenses	n.
Economic Vitality	Average of companies lifespan	%
Economic Vitality	% of buildings for industrial use	%
Economic Vitality	% of formal/informal activities	%
Production of Goods	N. of new industrial activities	n./year
Typical Productions	Employment distribution in production sector	%
Typical Productions	Annual growth rate of traditional production	%
Typical Productions	Average value of traditional production per hectare	€/ha
Typical Productions	Selling price of traditional products (without VAT)	€
Typical Productions	Net present value of economic activity	€
Typical Productions	Internal profit rate of economic activity	%
Typical Productions	N. of artisan units	n.

Source: Indicators deduced from reports about analyzed case studies ([Actum 2011](#), [Bigio 2010](#), [Dalberg 2013](#), [HR&A Advisors 2010](#), [IUCN 2014](#), [Labadi 2008](#), [Landorf 2009](#), [Loureço-Gomes 2009](#), [Mendes Zancheti, Gabriel 2010](#), [Ogilvie 2009](#), [Orbasli 2010](#), [Pais et al. 2014](#), [Quartesan, Romis 2010](#), [Roland et al. 2004](#), [Throsby 2012](#), [Torquati, Giacché 2013](#), [Torquati et al. 2011](#), [Trivelli, Nishimura 2010](#), [World Bank 2015](#))

impacts, such as more footfall, more noise, increase in pollution and disturbances to the ecological balance of the place, but also the erosion of “intrinsic values”. Sometimes this excessive increase can also produce a particular phenomenon, gentrification, meaning local communities and young people can no longer afford to buy/rent apartments because of rising prices. As has emerged from some case studies, many apartments remain unused for years, and the owners do not care about maintenance, leading to deterioration. Furthermore, the increase in property values produces “touch and go” tourism because of the high prices to stay in the area of the project. Therefore, gentrification (interpreted as expulsion of the most vulnerable part of the population both in economic terms and cultural ones) often represents a consequence of regeneration. In addition to removal of the lower classes, there is also a loss of authenticity of a place. They are transformed from places to live in to places to consume, mainly in the touristic sense.

Gentrification is often considered an inevitable consequence of urban regeneration processes. According to this point of view, modifying social composition allows the redistribution of economic benefits from having richer inhabitants that, having more money to spend, can contribute to revitalizing the economy of the neighbourhood. But, in this way, the problem of poverty or more generally of social issues are simply moved outside. It is the consequence of actions that consider only economic attractiveness. Social and cultural components need to be considered in regeneration strategies/policies in order to limit the negative impacts. Furthermore, choices have to come from bottom-up approaches, through community involvement. The economic impacts are generally interpreted only in the touristic demand perspective, but empirical evidence shows that there are other impacts. It is important to highlight that the contribution of cultural heritage to economic development does not end in the tourism economy.

Cultural Urban Landscape conservation/regeneration is able to produce impacts also in creative, cultural and innovative activities (Table 2). Cultural activities refer to activities that embody and convey cultural expressions. Besides the traditional arts sectors (performing arts, visual arts, cultural heritage, etc.), these activities also include services and goods such as film, music, books and press, DVD, video, television and radio, video games as well as new media. This category includes historic and artistic heritage (cultural heritage) and contents, as well as the information and communications industries (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. Indicators about use of ICT related to knowledge/use of cultural heritage did not emerge in the analyzed case studies. The ICT impacts on cultural heritage are considerable and therefore indicators are needed to monitor the benefits produced by them.

Another category of indicators include environmental and natural capital (Table 3). Most benefits in this category are indirect; 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 CO2 emissions and climate change: activities related to cultural heritage represent an intrinsically more sustainable model of land use, consumption and production that has been developed over time through a continuous adaptation between communities and their environments. Cultural heritage can help to face challenges related to climate change, for example, “through the protection and revitalisation of the huge amount of embedded energy in the historic building stock” (CHCfE Consortium 2015). Therefore, the indicators deduced from case studies should be integrated with indicators related to the avoided costs due to the improvement of health conditions. Most 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.

The indicators about the real estate category (Table 4) are, as for the tourism category, more known because the 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

Table 2: Creative and cultural activities indicators

Sub-category	Indicator	Unit measure
Creative Firms	N. of new handcraft shops	n./year
Creative Firms	N. of craft producers	n.
Creative Firms	N. of antique stores/second hand bookshops	n.
Cultural Demand	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	Perception of cultural benefits	qualitative
Cultural Demand	Visitors' Willingness to make a contribution to heritage restoration	%
Cultural Supply	N. of cultural events per year	n./year
Cultural Supply	% of growth of cultural events	%
Cultural Supply	N. of cultural institutions	n.
Cultural Supply	Growth of creative activities	%
Cultural Supply	Attraction of new investments in Cultural Heritage	€
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. of cultural facilities	n.
Employment	N. of jobs created in the short term in cultural activities	n.
Employment	N. of artists taking part in cultural activities	n/year

Source: see Table 1

Table 3: Environment and natural capital indicators

Sub-category	Indicator	Unit measure
Ecosystem Preservation	Economic value of ecosystem services (regulating and maintenance)	€ Net Present Value
Ecosystem Preservation	Attraction of new investments in ecosystem preservation	€
Ecosystem Preservation	Avoided damages from ecosystem/land preservation	€
Ecosystem Preservation	Benefits from preservation of agricultural land (ecosystem services evaluation)	€
Green Areas & Facilities	Attraction of new investments for enhancement of green areas	€
Green Areas & Facilities	Avoided costs of traffic congestion for the community (due to the enhancement of public transport)	€/year
Green Areas & Facilities	Avoided cost of traffic congestion for the community (due to pedestrian and bicycle routes)	€/year
Pollution Reduction	Attraction of new investment in infrastructure to reduce pollution	€

Source: see Table 1

can turn into tax impacts for the public. Therefore, cultural heritage is able to generate tax revenue for public bodies. Heritage landscape conservation refers to both intangible and tangible assets. The valorization, regeneration and “re-use” of heritage relates to the fixed capital, but also to values and knowledge. In built environments there is a great potential for saving energy. The investments can pay back well during the 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. Through the protection and revitalisation of the huge embedded energy in the historic building stock, cultural heritage can contribute to facing climate change challenges (CHCfE Consortium 2015). The amount of raw materials- water, etc. and embedded energy savings can be a useful indicator for assessing environmental benefits from cultural heritage re-use.

Cultural heritage can contribute to facing climate change thanks to some key features. An effective orientation and the physical characteristics, for example the walling’s gauge, contribute to guarantee a lower temperature inside and outside the buildings, improving the general microclimatic condition.

Furthermore, heritage reuse can contribute to revitalizing local economies with jobs, new businesses, tax revenues and local spending, as well as providing a valuable wildlife habitat and recreational amenities. Through functional re-use, we are also able to regenerate values, keeping them in time. The adaptive re-use (Douglas 2006) produces multidimensional benefits: cultural benefits (conserving “alive” a symbol of community identity), economic benefits (in terms of increase in productivity), and environmental benefits (i.e. reduction of resource consumption) and social benefits (i.e. employment). Cultural heritage adaptive re-use, that realizes operationally the circular economy model (Angrisano et al. 2016), can ensure that cultural heritage continues to “live” for present and future generations through ensuring use-values in an indefinite lifespan, thus preserving its intrinsic value. On the contrary, abandonment and obsolescence threaten its existence.

Through conservation/regeneration, new use values are created consistent with the value independent from the use. This does not mean loss of identity of heritage, but it means “to give” the places new functions (adequate to community’s dynamism and changing needs) through projects and strategies highlighting the relationships between cultural resources and city transformation policies. The functional reuse of cultural heritage is here considered as a way to valorize the identity of the territory. This is based on its history, values, specific knowledge, etc. It is also a pretext to stir up cultural values, the recognition of a common identity (not just local, but also widen), traditions and shared memory. The functional reuse is an entry point to regenerate cultural, community and collaborative values in the belief that the challenges to development can be overcome only together.

There is still a lack of evidence about the contribution of heritage to the social cohesion/inclusion (Table 5). Cultural heritage has positive impacts on social capital, revitalizing synergies, bonds and collaborative relationships. It is able to encourage associations, crowdfunding projects, and cooperation that contribute to local economic productivity. Therefore, the importance of evaluating this specific category needs to be stressed. Cultural heritage is able to build social capital and to contribute to social cohesion through providing a framework for participation and engagement and also fostering integration (CHCfE Consortium 2015). Cultural heritage expresses values and identity and organizes communities as well as their relationships through its powerful symbolic and aesthetic dimensions. The preservation of the diversity of cultural heritage, an equitable access to it and a fair sharing of its benefits can enhance the sense of belonging and place. Cultural heritage expresses and maintains the values and traditions of a city and its community, but its significance differ amongst communities and also among members of the same community. It links past, present and future but, at the same time, has the potential for generating conflicts. Diverse social groups could have different values and belief as well as different perceptions about what is relevant for their identity this can attribute different values to a heritage place. Coexistence of these differences can represent a problematic issue and sometimes can be the cause of actions that could have negative impacts on heritage values.

Table 4: Real estate (RE) economic indicators

Sub-category	Indicator	Unit measure
Employment	Growth of employment within RE development	%
RE Values	Average monthly rent	€
RE Values	Average market value	€
RE Values	Increase in private land value	€
RE Values	Increase in public land value (due to infrastructure development)	% and €
RE Values	% of Increase in property values	%/year
RE Values	Evolution of ownership and rental structures	%
RE Values	Volume of transactions in the RE market	€
RE Values	Number of office spaces	n.
RE Values	Price of properties	€/year
RE Values	N. of commercial units	n.
RE Values	Value of historic buildings	€/sqm
RE Values	Increase in value of surrounding buildings	€/sqm
RE Values	Rent values for commercial-use properties	€
RE Values	Rent values for residential properties	€
RE Values	Average value of property transactions	€
RE development	N. of new residential units	n.
RE development	Square feet of commercial development	Sq. feet
RE development	Property taxes gained from commercial development	€
RE development	Increase in municipal taxes	€/ year
RE development	N. of new construction activities and new permits	n.
RE development	Number of construction, restoration and adaptation works on historic buildings	n.
RE development	Re-functionalization of historic buildings	%
RE development	Housing vacancy rate	%
RE development	% of well-preserved buildings	%

Source: see Table 1

Table 5: Community and social cohesion indicators

Sub-category	Indicator	Unit measure
Social Care	Number of individuals receiving social care	n./inhab.
Social Cohesion	N. of volunteers	n./year
Social Cohesion	New funds to support activities of a non-profit organization	€/year
Social Cohesion	Perception of personal safety	qualitative
Social Cohesion	Number of association	n./10000 inhab.
Sharing/ Collaborative Economy	N. of new cooperative enterprises	n.
Sharing/ Collaborative Economy	N. of participants in crowdfunding initiatives	n.
Sharing/ Collaborative Economy	Amount of money crowdsourced through crowdfunding campaigns	€

Source: see Table 1

Conflicts and disagreements (in terms of values, interests and beliefs) can represent, if not well managed, an obstacle in the achievement of heritage outcomes to produce benefits for each involved stakeholder. Differences are inevitable, but they need to be acknowledged and respected in order to mitigate possible conflicts. A fundamental step of heritage management is to understand heritage values held by different groups within a society. Effective cultural heritage conservation can be achieved only through a wide community participation in choices and actions. It is necessary to ensure community participation in decision processes related to heritage conservation. This needs to facilitate dialogue and open the lines of communication to improve relationships. In the consensus building process, the identification of stakeholders and their different interests, values and identities play a key role. The interaction between community and expert knowledge is a prerequisite for implementing the UNESCO approach (UNESCO 2011). Collaborative processes are important to resolve differences in order to reach consensus and adopt decisions that can be effectively and sustainably implemented. Today, the increasingly multicultural society requires dialogue and reciprocity. Cultural heritage becomes a source of identity and can represent an entry point for cultural dialogue, mutual knowing and comparison.

Cultural heritage is subject to continuous changes and continuous hybridization processes that adapt throughout history (Fusco Girard et al. 2014): each building expresses the “graft” of new points of view, new styles, etc. in the historical tradition. It represents an “ingredient” for putting end to conflicts through a mutual knowledge of values. Therefore, cultural heritage can play a key role in promoting a more peaceful coexistence.

The last category of wellbeing indicators (Table 6) is analyzed in more detail in the following paragraph. There are some indicators that are currently not proposed and do not emerge from the case studies. Some indicators can be proposed to quantify benefits related to social cohesion (Fusco Girard et al. 2015):

- Community participation for common goods management;
- N. of crowdfunding projects launched;
- N. of crowdfunding projects completed;
- Average donation per person;
- N. of “rewards” allocated;
- N. of local companies involved;
- N. of banking and community foundations.

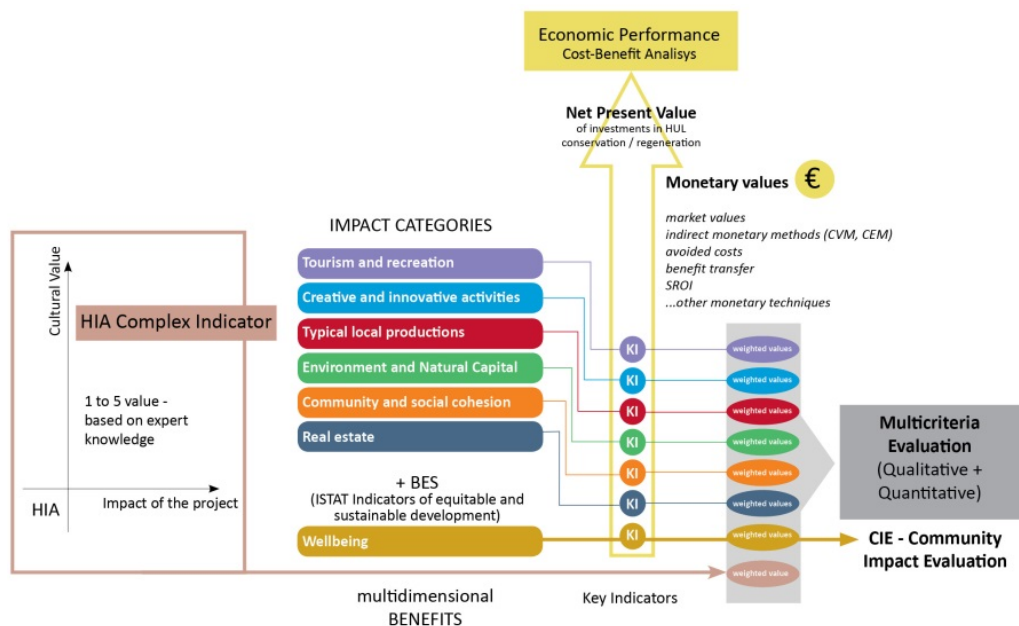
Some indicators about the social economy category can be proposed:

- N. of cultural urban landscape regeneration projects financed through municipal bonds;
- N. of released bonds;
- Areas of cultural urban landscape regenerated through municipal bond/crowdfunding project.

3 Multidimensional indicators of cultural landscape conservation

Tables 1 to 5 reflect the list of selected multidimensional indicators. Considering these multiple dimensions of cultural heritage, as also Dalmás et al. (2015) recognized, an “inclusive approach” is necessary. This concept recalls the notion of Social Complex Value (Fusco Girard 1987) that expresses the value of the asset without separating it from the community and the environmental context. In this perspective, the value is expressed through a set of multidimensional indicators.

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



Source: Fusco Girard et al. (2015)

Figure 1: A methodological proposal for the assessing Cultural Urban Landscape

because the cultural urban landscape, just being a landscape, can be perceived in different ways from people who live within it. Our effort is to transform individual perception into a shared interpersonal perception.

Objective indicators are based on hard data, while subjective indicators refer 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 consequences for the economy and productivity of a city. Several community surveys and focus groups are necessary to support hard data about cultural heritage investments (Rypkema, Cheong 2011).

Once the matrix of the multidimensional indicators has been identified, it is important to understand how to use and “translate” them into operative terms. A first step towards an integrated approach is to evaluate these multidimensional indicators (related to impacts of investments in cultural heritage/landscape conservation/regeneration) as proposed in the methodological framework shown in Figure 1 (Fusco Girard et al. 2015).

This proposed approach 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 projects. Therefore, in order to capture all impacts produced, indicators referring to all identified categories are considered. Key indicators are identified for each category. They depend on different aspects: scale of intervention, political context, 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 of through which indicators the different stakeholders perceive the project’s impacts. Of course, it needs to be considered that the judgment is subjective and it can be influenced by external factors. A greater number of stakeholders increases the reliability of the results. The interaction between community and expert knowledge (Fusco Girard et al. 2013) is essential at this stage in order to identify shared and understandable indicators for (almost) everyone.

The proposed assessment framework has two significant outputs, 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 using the identified impact categories. This process can integrate the Heritage Impact Assessment, providing a new comprehensive impact assessment. Considering the multidimensionality of the issue, it needs to hybridize different evaluation methods. The proposed assessment framework considers Cultural Urban Landscape “as a complex indicator for sustainability of the city or territory, of the quality of life, vitality of the place, and the community’s sense of belonging” (Hosagrahar et al. 2016).

4 Landscape variation/wellbeing variation

In a period characterized by 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 public institutions should ensure wellbeing, both individual and collective. It is not only related to economic wealth, but also to the condition of ensuring social cohesion, human rights fulfilment, human needs fulfilment etc. In this perspective, understanding the linkage between the variation of landscape and the variation of wellbeing becomes a relevant issue. First and before evaluation, the concept of wellbeing needs to be defined. 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 associated with medicine (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 latter is important to define human wellbeing because different factors can interfere with each other and influence it.

Interesting considerations about the assessment of wellbeing and its dimensions are identified by the National Institute of Statistics (ISTAT) and analysed in the BES and URBES Reports (ISTAT 2015a,b). Equitable and Sustainable Wellbeing (BES) is an analysis of the aspects 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 on the topics “beyond GDP” and the “need for broader measures of progress to complement gross domestic product” (United Nation 2012). Their purpose is to produce a set of multidimensional indicators able to evaluate wellbeing. They achieve this by integrating the “traditional economic indicators” with indicators related to the quality of life that considers equity and sustainability issues in order to give a more complete point of view about society’s development. The aim of ISTAT is to support the debate “beyond GDP”, trying to bring together social, economic, environmental and good governance aspects (all of them are fundamental to achieve wellbeing). The wealth of the society has been for too long linked to increasing GDP. It represents an important economic indicator able to evaluate the wealth of a society; this linkage – between GDP (gross domestic product) and the wealth of society – is a common belief based principally on the idea of “economic growth”. Nevertheless, GDP is not able to capture the multidimensional aspects of wellbeing. It does not represent human wellbeing (Stiglitz et al. 2009): instead it needs to go beyond the mere economic number. Economics should be only instrumental to the achievement of wellbeing. GDP is an oversimplified measure that leaves out many aspects that are not economically evaluable: it is not able to capture information about wellbeing, happiness and the level of life quality.

The above mentioned considerations and the shift towards the new paradigm (Hosagrahar et al. 2016) require an overcoming of this assumption. Therefore, in this perspective the need for new indicators emerges. The issue related to the evaluation of wellbeing assumes a central role in the current debate. It is important to evaluate wellbeing through multidimensional approaches, able to take into account for example aspects of subjective

evaluation from citizens. In the ISTAT reports some indicators are identified. They (integrated with others) could be considered in the seventh category (wellbeing category) of the evaluation framework proposed in this paper. Due to the complexity of the notion of wellbeing and its subjectivity (wellbeing is perceived), it is difficult to identify general shared indicators.

In the common understanding wellbeing is associated with a good quality of life. It is a true assumption, but quality of life is not the only indicator of wellbeing. Wellbeing is associated with a comfortable, healthy, happy life and life quality affects this state. Life satisfaction is another indicators used (in combination with others) to assess wellbeing. The binomial “landscape-wellbeing” assumes a central role in the international debate related to sustainable development (Duxbury et al. 2016, Hosagrahar et al. 2016, ISTAT 2015a,b). Landscape is important for our wellbeing and this 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 identities of that place, but rather seeming extraneous to it. Aesthetic value can contribute to wellbeing but, at the same time, it is the most subjective and personal value. 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 characteristics. The quality of landscape depends on aesthetic factors and also on aspects related to all landscape values. It is not only related to a visual perception (D’Auria, Monti 2013). In landscape the signs of the past are stratified, in a constantly changing way. The landscape keeps the signs of the evolution of the relationship between man, the 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 wellbeing, a bad landscape produces illness. The landscape also affects our actions and our choices. A healthy landscape corresponds to attractiveness capacity, economic and social dynamics, etc., while an ill landscape corresponds to relocation and degradation, etc.

The economic dimension of the binomial landscape-wellbeing is also important. 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 landscapes (human and social) play a central role in local development, creating cooperative capacity, synergies and symbioses (Fusco Girard 2013). Empirical evidence shows that there is a relationship between landscape quality and goods and service demand/sale; in/for a good landscape, there is a higher willingness to pay.

If we are able to conserve Cultural Heritage, we build memory of ourselves and therefore we are able to conserve identity in the face of globalization changes. Conservation expresses the deliberate effort to fix memories in time, to avoid losing our identity. We can react to the risk of losing our identity (because of globalization) through Cultural Heritage. We fix the memory through Cultural Heritage that has been handed down and, in turn, we pass it on to future generations. For this reason, all actions aimed at protecting and improving the environmental, social and economic wellbeing of communities should take into account cultural heritage as well as the opportunities that it offers and threats due to an inappropriate use. Human participation in local cultural activities, such as music, dance and theatre, contributes to the improvements in wellbeing and quality of life (Duxbury et al. 2016). Community participation in cultural activities therefore fosters wellbeing.

There is not much empirical evidence about the contribution of cultural heritage to the achievement of wellbeing. This contribution is related both to the dimension of cultural heritage and identity, sense of belonging, etc. and to the mere functional dimension related to its use. Both of these are important to the achievement of sustainable development with particular reference to the wellbeing category. Cultural heritage contributes to bettering urban life in different ways. For example providing options for housing (through reuse etc.) to improve public spaces, etc. Below some wellbeing indicators (extracted from

Table 6: Wellbeing indicators associated to cultural heritage conservation

Sub-category	Indicator	Unit measure
Education and training	Young people who do not work and do not study	%
Work and life balance	Employment	%
Work and life balance	Non-attendance at work	%
Economic well-being	Available income	€
Housing quality	% of population living in homes without toilet	%
Social relationships	N. of volunteers in non-profit	N./10,000 inhab.
Social relationships	N. of non-profit institutions	N./10,000 inhab.
Social relationships	N. of social cooperatives	N./10,000 inhab.
Security	Murder	N./100,000 inhab.
Security	Theft in dwelling	N./100,000 inhab.
Security	Pickpocketing	N./100,000 inhab.
Security	Robberies	N./100,000 inhab.
Landscape & cultural heritage	Public libraries	N./100,000 inhab.
Landscape & cultural heritage	Museums	N./100,000 inhab.
Landscape & cultural heritage	Libraries users	N./100 inhab.
Landscape & cultural heritage	Museums visitors	N./100 inhab.
Landscape & cultural heritage	Green space	Sqm on 100 sqm
Environment	Drinking water drainage	% of water scattered on the fed volume of water
Environment	Urban air quality	Daily value for PM10
Environment	Urban green space	Green square meters per inhabitant
Environment	Protected natural areas	% of the municipal area
Environment	Urban gardens	Sqm per 100 inhab.
Research and innovation	Patents	Patent applications per million inhab.
Research and innovation	Productive specialization	Productive specialization in knowledge-intensive technological sectors for 100 emp. of local units
Quality of services	Cycle paths	km per 100 km ²
Quality of services	Pedestrian areas	smq per 100 inhab.

Source: Il Benessere Equo e Sostenibile nelle Città – Report ISTAT (ISTAT 2015b)

URBES indicators) are listed that could be considered for cultural heritage conservation projects.

An example is the case study of Skopje (Throsby 2012). The project aimed at the preservation of cultural heritage, the revitalization of the area and the promotion of participation of residents in the program design and implementation (2005). This produced an increase in the employment rate, for example the number of staffing in museums increased from 13 employees (pre-2005) to 50 employees (post-2005). The improvement of landscape increased the attractiveness of the city. It is “translated” in terms of increases in the number of visitors (economic benefits). In fact, the average number of visitors per year for three main museums/galleries in the Skopje old bazaar increased from 257,000 (pre-2005) to 414,000 (post-2005). Another social indicator able to show the capacity of cultural heritage to produce wellbeing is related to the increase in the average monthly wage/salary level that rose from 270 US\$ (pre-2005) to 515 US\$ (post-2005) for Managerial/administrative staff and from 185 US\$ (pre-2005) to 380 US\$ for service/selling staff (post-2005) (Throsby 2012).

Oaxaca De Juarez is another case study (Quartesan, Romis 2010) demonstrating the multidimensional benefits of cultural heritage conservation/regeneration. A significant indicator related to the conservation project of this city (year 2005) is the decrease of vecindades (units that hosts different families that share facilities such as lavatories, kitchens, etc.) from 75 (year 1997) to a number of 35 (2008) (Quartesan, Romis 2010).

The conservation project of the historic center of Salvador De Bahia is another significant example of the contribution of cultural heritage conservation to the increase of wellbeing and city productivity. In fact, after the conservation project, the median worker income increased from 609 Brazilian Reais (year 2000) up to 631 Brazilian Reais (year 2007) and the total unemployment rate decreased from 26.5% in the years 2001-2003 to 22.4% in the years 2005-2007 (Mendes Zancheti, Gabriel 2010).

The preservation project of Toronto produced an increase in the number of artists from 10.5 million (year 2004) to over 11.5 million (year 2006). In addition, the attendance at City-funded and City-operated cultural programs for youth (16-24) increased from 281,000 (year 2004) up to 593,000 (2006) (Ogilvie 2009).

After the nomination as European Capital of Culture 2008, Liverpool registered an increase in the number of employees in creative industry enterprises from 10,000 (year 2004) up to 10,987 (year 2008). It is also important to note the perception of the community. By the end of 2008, 85% of Liverpool's residents agreed that the city, after the nomination as European Capital of Culture, is a better place than before nomination with an improved quality of life (Garcia et al. 2008).

From case studies some data related to wellbeing has emerged: data related to job satisfaction, generalized trust, perceived access to services or satisfaction with relationships did not emerge. Like these case studies, there are many others demonstrating the benefits produced by cultural heritage conservation/regeneration, not only economic benefits, but multidimensional ones. They emerged also in the analysis of the case study of Pozzuoli (South of Italy) that is a forthcoming work (Nocca 2017).

5 Conclusions

This is a very important moment for urban policies because the international debate is focused on sustainable development and the "New Urban Agenda" has been approved at Habitat III, the United Nations Conference on Housing and Sustainable Urban Development, that was held in Quito, Ecuador, in October 2016 (United Nations 2016). It strengthened the idea that cultural heritage and landscape conservation /regeneration can play a key role in sustainable development.

Cultural heritage is interpreted as an essential component of the urban system, of the city as a living organism, and as Patrik Geddes anticipated in 1915 (Geddes 1915), of the city as a dynamic, complex and adaptive system reflecting the changes in society, turning with it, and adapting to new demands in a dynamic perspective. Therefore, the city as a living organism should emulate the behaviour of nature through organizing all processes according to circular economy processes in which nothing is wasted, but everything can be reused (Nocca 2017). In this way, each "product" becomes nutritious for the other and does not produce waste. In this perspective Cultural Heritage can be considered part of a circular productive process through maintenance, reuse and recycling.

The indicator matrix emerging from the present study represents a first step towards a new effective approach able to support the recognition of the key role of cultural heritage in sustainable development. As has emerged from the previous paragraphs, the cultural heritage approach requires an adaptation of evaluation methods. The challenge is to identify a more effective evaluation approach/method that contributes to make integrated conservation more effectively into sustainable human development strategies.

The above-mentioned perspective of city humanization through cultural heritage conservation/ regeneration suggests focusing on social and human impacts of conservation. The aim is to identify and evaluate the value of cultural heritage through quantitative and qualitative data, developing indicators and maps in order to demonstrate that cultural heritage can contribute to comprehensive local productivity.

As emerged from empirical evidence, Cultural Urban Landscape conservation can be an effective catalyst for stimulating local and regional economies (Licciardi 2012, Luxen 2010). The good practices demonstrate that it is able to contribute to city productivity. It is also able to produce economic impacts (Nypan 2005), but there is a need to demonstrate the multidimensional effects of investments. Economic parameters alone are not able to effectively evaluate the progress of societies, but they need to be integrated with social

and environmental information and with indicators of inequality and sustainability.

Surely, the economic impacts of cultural heritage conservation/ regeneration need to be understood more in depth, especially because the society of today speaks the only language of economics. An economic matrix is absolutely necessary, but it is not sufficient. It is not able to capture the multidimensional benefits of cultural heritage conservation/regeneration. Hybrid evaluation methods (Fusco Girard 2014b,c) are therefore required in order to integrate the economic matrix with qualitative indicators, expressed by social (social matrix) and environmental components (ecological matrix) (Fusco Girard et al. 2015, Nocca, De Rosa 2015).

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