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Sustainable rehabilitation of neglected and marginal landscapes: the San Lorenzo valley in Sardinia

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Abstract

This paper describes a proposal for the sustainable rehabilitation of a neglected and marginal fluvial landscape. It situates the experience into a broader debate about sustainability and spatial design, and then draws from it some general conclusion. The study subject is a fluvial valley characterised by thirty-six mills, which once served the agriculture of the surroundings. The decline of water as power source led to the decline of the valley. The mills became eventually farms, houses, or were left empty. The proposal envisions multiple forms of interaction with the different contextual issues related to the context, turning the design of the water course in a way to cope with erosion and floods, to produce clean energy, and finally as attractor for tourism. The result is a series of integrated actions that offers new opportunities to the community, designing a new sustainable landscape drawing from the specific natural and historical aspects of the site. Every action is linked with one of the anthropic and natural factors that characterise the valley, or that can be beneficially introduced, so that the proposal can be further adjusted in accordance with the relative importance of each factor over time.

Keywords: Sustainability, Rehabilitation, Neglected and marginal landscape, Collective management

Introduction: sustainability and landscape

Concepts like landscape and sustainability keep a certain amount of ambiguity, like many other related to theories and practices dealing with the transformation of our environment. The ambiguity comes up from the various meanings attributed over time to capture the particular essence of these words, or from the different meanings given, even in the same historic moment, by divergent and sometimes antagonistic schools of thought (Le Dan-tec 1996; Roger 1995; Latour 2015, Olsson et al. 2017).

For example, sustainability has become the key of all locks, including the well-guarded gates of research funding; a catchword that can suggest attractiveness and trendiness or can be used to induce a feeling of inadequacy, when someone feels unable to put it into practice.

The presence of different and sometimes divergent definitions clearly shows this ambiguity both at the conceptual and the disciplinary level.

While the basic meaning is clear, profound differences and contradictions, compelling yet unreliable claims, as well as significant gaps, emerge when looking closer at theoretical definition (Rios Osorio et al. 2005; Moe 2007).

This ambivalence sets out different practical approaches, which in many cases bleed into speculations. This blatantly comes out, for example, when such approaches are based on nostalgic, aestheticizing, or historical models which overlook the inherent dynamism of landscapes and encourage unsustainable forms of conservation (Sinclair 2009). In this case, the contemporary landscape is judged according to obsolete criteria, and thus negatively perceived as the symptom of the loss of a supposed, pre-modern pastoral innocence (Menard 2014).

The reason for this is that landscape is a mental construct (Daniels and Cosgrove 1988), as various

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disciplinary positions now emphasise. Thus, it fluctuates incessantly between the individual and the collective dimension, as a component of individual or collective identity.

Landscape is not a static object but a dynamic subject, an uninterrupted, potentially conflictual process, inconvenient and untidy (Bender 2001). As a framework of our relationship with the surroundings, it interweaves nature, history, culture and society. Landscape is not simply a group of changing relations (Cauquelin 2000; Donadieu and de Boissieu 2002; Mayet 2002), a quality also defined as *mouvance* (Berque et al. 1999; Berque et al., 2002; Aubry et al. 2006), but is also the product of continuous shifting, according to Lassus' conception, between observer and observed, between perceiver and perceived, which nurtures the modalities of *artialisation* of the landscape of an indirect or *in visu* type, between the reality of climate change and pastoral heterotopias (Roger 1997; Berque et al. 2002; Marinic 2013).

For these reasons landscape can only be interpreted and conceived at a local level. This implies that approaches, forms of preservation and techniques of intervention should be referred to specific contexts, and that changes in the context will result in changes in the approach.

With a very radical concept borrowed by evolutionary biology, Moe (2007) describes the complex interaction between design and its context as an "epigenetic landscape", whose folds influence the evolution of a design process. A different kind of sensitivity and a different way of looking at the landscape should allow us to change the prevailing aesthetic categories, to establish visual patterns and models, and to consider opportunities of change in an evolutionary perspective. It would also help to cast off those nostalgic views that would like to turn the landscape into an antique object or an open-air museum.

Traditional approaches focused on socioeconomic, cultural and political isolation, land ownership settings, recreation, or conservation of the specific features typical of scarcely productive rural areas actually generate landscapes doomed to survive as archaic relics of previous centuries, to be used as museums or even ruins.

The project of rehabilitation of the San Lorenzo Valley in Osilo, which will be described herein, has nothing to do with the protection of the landscape at all costs, or with an a priori restoration of the form and function of the mills system.

The attention shifts to the uninvestigated potential that a "local" glance might reveal, abandoning prescriptive, state-controlled forms of management and protection of the landscape which recall a principle of responsibility, thus affecting the entire local society.

The design approach is focused on the resources and the potentiality that is already there, for example the condition of marginality. In fact, marginality can turn into a chance and not a handicap, if the neglect gives way to a careful approach towards "life" in the territory instead of transforming it in an object of mere contemplation.

Thus, new features of tourism-related personal care are an opportunity to rebuild relations between the site, local society, and external users. In this perspective, the concept of sustainable development needs to be better specified.

According to a widespread stream of thought, environmental friendly design is to a large extent a straightforward application of best practices, often abstracted from heterogeneous physical, social, and technological contexts. The idea, in the terms of Harvey (2001), of "fixing" depleted landscapes by implementing ideal paradigms of design, seems perfectly compliant with neo-liberal imperatives (Spencer 2012) in order to make them palatable for the market.

Conversely, we are more concerned in developing sustainable interventions more deeply rooted in local societies and taking in account other demands coming from contemporary life as well. This seems to be relevant in less densely populated areas, where outstanding landscapes and strong local identities often hinder the application of best practices mostly born in urban environments. Effective solutions should blend the rigour of the best practices with creative and appropriate interpretations that fit physical and social context.

Complexity instead has usually been approached from the reassuring point of view of the specialist (Hensel 2012). An intense research-activity has contributed to the gradual deepening of the knowledge in specific aspects, enclosed within the boundaries of different disciplines (such as development of building technologies, increase of efficiency in lighting and air conditioning, etc.). On one hand this effort resulted in a better knowledge of specific issues, on the other hand it produced a shift in the design disciplines, from a generalist role in coordinating various specialists, to a range of specialised variants (bio-architecture, green urban planning, etc.) with an exclusive theoretical luggage, sometimes inspired by regressive nostalgia.

One important and highly relevant question, however, is whether it is actually possible to approach such a complex theme by introducing new divisions and specialisations, and whether it is wise to solve local issues by adopting world-wide standards (Kaltenbrunner 2003). We may have to tune down the attention on the developments of the single disciplines and instead focus on the need of a more coherent, pragmatically constructed vision based on empirical observations.

The synthetic point of view of the designer is one of the core elements in the construction of an organic vision: to achieve this aim, the field of planning must abandon its leaning towards formalism and accept to face reality.

The rehabilitation project for the San Lorenzo Valley in Osilo (Sardinia) was implemented consequently by a team composed of experts in different disciplines that have worked close together: environmental and regional planning, landscape planning, architectural design, energetics, hydraulics, botanics, naturalistic engineering, etc.

The San Lorenzo Valley of Osilo

The territory of Osilo, in the north-west of Sardinia hosts an interesting and almost unique example of industrial archeology in the island, and an interesting example of complex landscape, which developed over time by inextricably weaving natural and artificial processes.

Thirty-six decommissioned water mills dot the course of the Rio San Lorenzo, from the small homonymous centre to its confluence in the Silis River. Some among them are still functional and complete with all original parts and gears, although they all lost their function and became week-end country houses.

The watercourse shaped the natural landscape, the history, and the economy of the valley.

The end of the milling activity, and the consequent loss of importance as an industrial area, led to a slow decay of the delicate balance between production system, territory, local community, and water.

Therefore, there is no possibility of restoring the strong link between the stream and the local population provided by the milling activity in the past.

What can be done instead is to bring the watercourse back to the physical and conceptual centre of the life in the valley, re-structuring its settlement, its society, and its economy around it. The municipality asked thus for a proposal to imagine a different future for the valley.

From the beginning the design team decided to work out a plan aimed at turning the unalterable physical qualities of the valley, particularly its sense of enclosure, remoteness and isolation, into attractive features.

In order to achieve this, the team was further expanded to embrace other disciplines than just architectural design and urban planning. Hydraulic engineers, botanics, energy and tourism specialists joined to allow a deeper investigation of the qualities, restraints and opportunities offered by the valley, in order to recombine its existing natural assets, its local society, and its historical remnants in a meaningful whole based on specific local qualities.

Geographically, the Rio San Lorenzo valley runs from the south to the north, with a variable cross-section that opens up as it approaches to the larger Silis valley.

It features a Mediterranean macroclimate, and three phytoclimatic levels: thermomediterranean, lower mesomediterranean and upper meso-mediterranean.

The two sides of the river show different lithology: on the left are calcarenites and calcirudites; on the right is a lava flow made of andesitic breccias sometimes grossly stratified.

Reforestation took place on the hydrographic left side of the valley, while sparse Mediterranean scrub and grassland characterise the right side.

Holm, oak, poplar, pine, willow, shrub, dwarf palm, olive tree, are commonly found and represent the potential natural vegetation of the entire system.

Naturalised allochthonous species populate the valley: tropical plants, vegetable gardens, vineyards, and orchards.

The valley settlement consists of two different systems: the small compact centre of San Lorenzo a Monte, where most of the inhabitants of the valley live, and the mills scattered along the stream, apparently at random. However, while progressing through the design process, the interlocution with hydraulic engineers revealed that their spatial distribution is consistent with the hydraulic laws ruling the network of millraces that divert the river's water towards the wheels of the mills, and bring it back to the river. During its run the water serves two or three mills with a vertical separation of four meters between each other, to restore its kinetic energy after flowing through each wheel. Consequently, the clusters of mills are more recognisable in the vertical plane, than in the horizontal.

With the end of the milling activity, millraces were abandoned and partially dismantled over time. In spite of this, the remaining parts still permit to reconstruct their paths. The mills then slowly underwent a transformation in country houses, sometimes used to support agricultural activities that take place in the fertile surrounding land. Currently, even the cellular network does not provide sufficient coverage of the valley.

However, this quiet, marginal, and neglected condition has the potential to become a "deceleration area", a space of relax with limited, controlled connectivity, far from noise and environmental pollution, but close to the main touristic flows.

This area could then be considered as an in-between zone, an "edge ecology" mixing natural and artificial, past and present, urban and environment, that clearly shows how entangled are the current social and environmental crisis. A kind of "third space" (Bhabha 1990, 1996, 2001; Merrifield 2000; Routledge 1996; Soja 1996, 1989, 2000) or "third landscape" (Clément 2004), whose opportunities can be drawn from its environmental qualities.

In-between areas offer an ideal context to experiment forms of integration and coevolution between systems, situations and different entities, new management processes, new scenarios for environmental and urban integration, new models of urbanity. They are peripheral, run-down, degraded and abandoned spaces, which offer themselves for “colonisation”. They are spaces of “becoming”, spaces of flows, of ecological dynamics and biological and cultural contamination.

Such spaces, deprived of their original function, become reserves “of indeterminacy” (Corner 2006), places of potential action where non-resolutive, processual, strategic interventions may be proposed that will integrate the environment, human systems and the artificial world.

Sustainable rehabilitation in the San Lorenzo Valley¹: an epigenetic process

The proposal aims at defining a design process, more than a fixed concept. Without pursuing an optimal steady final state, it delineates all the necessary moves to build a new system of relationships. Therefore, landscape interventions and changes in the natural system are limited to what is needed to open further possibilities and add other functions.

At the same time, the proposal is not just a collection of possible scenarios.

Instead, it envisions a kind “epigenetic landscape”, in Moe’s terms, aimed at conforming the actual landscape. The factors that conform the epigenetic landscape are both urban and environmental. The role of design is balancing those relative forces in order to regenerate this small “urban machine”, its settlement and its ecological structures. Due to the long-time of development of such projects, each factor could change its relative importance over time, producing slightly different outcomes, without radically changing the result. This proposal is therefore a general picture, a map whose aim is helping in steering the process.

It helps in visualising an iterative process in which architects, planners and the local society define physical interventions and policies that work as hinges (Kwinter 2001) reconnecting the local society to the specific geography of the valley.

The municipality asked to take advantage from the coming back of the water into the riverbed through a

proposal to imagine a different future for the valley. But the valley suffered other troubles as well: hydrogeological instability, loss of attractiveness, floods at the confluence of the San Lorenzo with the Silis river, lack of physical and virtual connectivity.

Design becomes therefore a tool to reorganise the different aspects of the site. These could be evident, like the requests of the municipality or the floods in the lower part of the valley, or concealed, as the progressive marginalisation of the valley or the passing of time eroding the empty mills due to neglect.

But all these forces are at the moment rather feeble. As noted beforehand, the loss of importance of the river resulted in a depletion of all the other anthropogenic and natural features of the valley.

The first move in the design process is therefore to determine the natural and artificial factors to boost in order to lay the basis for a new system of relationship within the existing elements.

A thorough consultation with experts confirmed the first impression.

Water is still the key element in the valley, and the one to leverage to envision a new fruitful combination between environment and human activity.

First factor: water

Over time, the watercourse shaped the natural landscape, the settlement, and the economy of the valley.

The increasing economical marginalisation came as a consequence of the progressive loss of importance of the stream, first when other forms of energy replaced the water-power, later when it was channelled and lined with concrete. Therefore, there is no possibility of restoring the strong link between the stream and the local population provided by the milling activity in the past.

What can be done instead, is bringing the watercourse back to the physical and conceptual centre of the valley and of its life, re-structuring its settlement, its society, and its economy around it.

In order to achieve this, the team was further expanded to embrace other disciplines than just architectural design and urban planning. Hydraulic engineers, botanics, energy and tourism specialists joined to allow a deeper investigation of the qualities, restraints and opportunities offered by the watercourse, in order to recombine in a meaningful whole the existing natural assets, local society, and historical remnants.

The greater opportunity was the decision taken by the Regional Water Board to change the water supplies management in the north of Sardinia, conveying the water of the springs of Cala Casu, Ottula, Nughes, and Brenaghe, originally diverted to the main urban centres around, back to Rio San Lorenzo.

¹ This study was based on the needs of Osilo Municipality. The design group was: Paola Pittaluga (Territorial planning, project leader) Francesco Spanedda (Architectural Design, project leader) with Martino Marini (hydraulic energy), Paolo Vargiu (hydraulic engineering), Vlatka Colic (landscape), Gianluca Melis (cartography and GIS), Giuseppe Onni (“spread hotel”), Antonio Serra (energy efficiency, renewable energies), Elisabetta Solinas, Alessia Lampreu, Rita Sanna (graphics).

Although this would considerably reinforce the quantity of water, this would be still subject to noticeable seasonal fluctuations. Two abandoned quarries located downstream from the springs will work as detention reservoirs to average out the variations in the water-flow.

To further increase the flow into the riverbed, the water sewage of the mills should be diverted to the river after convenient treatment in several artificial wetlands systems.

In spite of the current water scarcity, the lower part of the valley suffers from recurrent floods in the winter season. The reason lies in a concrete channel that lines the lower half of the riverbed. The channel cuts off the river from its banks, so that the neighbouring orchards cannot absorb its water anymore. In addition, a low bridge currently reduces the section of the channel at the outlet towards the Silis River, obstructing the flow of water that runs on the concrete surface.

The proposal thus envisions the demolition of the concrete channel and the enlargement of that section of the riverbed, introducing gabion staggered walls that configure a transition space to the riverbed, providing both public access opportunities and areas that can be flooded when the water overflows.

Water comes also into play for its mineral properties. It will help in introducing medical and health care activities in the area, enhancing the opportunities to develop tourism.

A refurbished and managed network of millraces can facilitate the integration of water into the everyday life of the residents and help to implement a constructed wetlands system by keeping the beds wet even in case of lack of sewage water.

Thus, water becomes the main environmental, functional, landscaping, and social element to work out a plan aimed at turning the unalterable physical qualities of the valley, particularly its sense of enclosure, remoteness and isolation, into attractive features.

Second factor: environmental restoration

Water is just an element in a small-scale, yet complex landscape shaped by the forces of erosion, sedimentation and natural growth.

To progressively adjust the landscape under the pressure of natural forces, the proposal conceives several actions of environmental restoration to secure the slopes of the hillsides and allows the accessibility of the riverbanks. Along with the previously mentioned demolition of the concrete channel, naturalistic engineering methods and techniques solve problems ranging from erosion of the slopes to landslides, from hydraulic systems to environmental rehabilitation of quarries and landfills.

The hydrographic left side is already covered by a eucalyptus wood, implanted after an accident occurred in the late 50 s, when a massive boulder rolled down the slope and destroyed a mill, eventually killing a child.

The slopes on the hydrographic right has been classified as landslide-prone by the regional hydrogeological risk plan. The proposal therefore envisions a process of reforestation that aims to reconstruct the local plant communities, composed by oak, cork, olive, carob tree, arbutus, mastic, rosemary, dwarf palm, bay, broom, rock rose, gorse, myrtle, lavender.

Riparian vegetation along the river will also be maintained and restored.

Third factor: social involvement

The involvement of local society is manifold and permeates the whole proposal. In fact, actions of involvement of the local population can be directly or indirectly found in the description of the other drives.

At a smaller and more private scale, the proposal defines the aforementioned system of policies to improve the quality of households, introducing a kind of neighbourhood by re-organising the mills around their millraces.

Moreover, the proposal defines an alternative and hybrid strategy acting in an intermediate sphere between public and private. In fact, by introducing public functions along the watercourse, people can reach the otherwise privatised riversides and cross the flow in few points, using new bridges connecting the public buildings.

At a public scale, the proposal envisions new uses for the abandoned mills, which are expected to build from scratch a new economy on the site. The main activities that can trigger this process can be related to mental and physical health obtained through water: a care centre for mentally impaired children, located in the steeper and more intimate section of the valley and a spa that benefits from the water mineral properties.

However, due to the sparse population of the valley, any form of economic and social activities requires increasing the number of inhabitants, even just temporarily.

Fourth factor: refurbishment of the built environment

Another fundamental process taking place into the valley is the slow decay of the built environment, and the progressive depletion or change of use of the existing buildings.

The fragile built heritage of the valley mostly consists of the mills and their waterworks, in different conservation state. Although totally obsolete as means of production, they are still valuable under several points of view. First, many of the mills found a new life as houses, and the people living there, maintaining the orchards, and taking

care of the surroundings, are the one that actually saved the valley from a complete depletion. Second, they document a small piece of historical past that is still relevant for the local society. Last, but not least from the point of view of architectural design and urban planning, they offer their materiality for further editing, to become part of new spatial arrangements in a process of reuse and re-signification (Bourriaud 2002).

The latter facet of heritage is the one that on which this study focuses, giving an environmental meaning (Monsù Scolaro and Spanedda 2016) to the built heritage, to the waterworks, and to the regeneration of the historic rural landscape.

Subtracting the valley from its marginal and neglected condition should avoid breaking the vibe of the place, and instead reinforce its character of an “area of deceleration” and relax. This target can be accomplished by introducing differential changes in the existing artefacts to establish new ways of use, in order to establish again a link between the local society and the watercourse.

The proposal envisions two kinds of actions on the built heritage.

The first one is driven by the public hand, whose main concern should be organising accessibility by means of a new parking system, securing hydrogeological issues through the new design of the riverbanks and the reforestation of the hillsides. The main parking areas are located between the road and the river bed, avoiding excavations or obstructions of the views on the valley. Footpaths and bicycle trails connect the car parks and the buildings.

Furthermore, the municipality can acquire the few abandoned mills to host activities capable of bringing attention to the area and activate a regeneration process or facilitate their acquisition by private investors.

The second action is the refurbishment of private households.

In order to avoid coercion, the proposal sets a few policies to involve the local community.

The first one is to provide them with a manual to refurbish their homes and reducing their energy needs. Actually, the manual is already in the hands of the municipality, being the outcome of a previous research activity on the energetic improvement of existing buildings.

The second is a publicly funded intervention to improve the cycle of water and the use of clean energy. This action draws on the spatial organisation of groups of mills served by millraces described above. Millraces are not just historical traces. In fact, they configure an already available, proven hydraulic system connecting the mills. Millraces could be seen therefore as a small infrastructural network to design some environmental facilities at the scale of a group of mills, specifically a wetland

bed and a biomass-boiler for each group. The small channels can be easily refurbished to distribute fresh water and keep alive wetlands when the sewage is scarce. Their modified cross-section can house the insulated pipes that distribute domestic hot water coming from small co-generation boilers fuelled by biomasses from the nearby pinewood, as well as the outlet pipes from the wetland. Furthermore, their controlled profiles make tracing of pedestrian paths easy, connecting the mills and the riverbed.

Fifth factor: tourism

Tourism is a common solution to achieve a temporary boost in population.

Although rather different from the usual touristic offer in Sardinia, based on “sun, sand, and sea” and on the aesthetic of pristine seascapes, the complex mix of natural and anthropic elements characterising the valley can be attractive to new forms of tourism.

Currently, responsible travel practices destinations are shifting from untouched natural sites to places featuring innovative ways of managing socio-natural relations (Moore 2015).

This kind of ecotourism is fundamental in conveying tourists the notions of global change. This turn in ecotourism could be an opportunity to raise the knowledge about environmental issues, as well just a further “capitalist fix” (Fletcher 2019) to revive the tourism industry menaced by the climate change.

It is evident though that this proposal could build a framework for a touristic development of the valley as an example of design striving to establish a new system of relationship based on a rich tangling of artificial and natural elements.

In order to accommodate this kind of tourism and connect as much as possible residents and tourists, both socially and economically, the plan draws from the concept of “spread-out hotel”, a rather common form of hospitality in the historic centres of Sardinia. “Spread-out hotels” are hotels whose rooms are located in old buildings within a dense historic town centre, and are served by a common central building, housing offices, a reception and a restaurant. Transposing this concept within the valley, the central functions can be allocated in the abandoned mill at the centre of the valley. A water lift links the central parking area and the areas of the central building of the “spread hotel” and of the Spa.

The nearby reforestation provides the construction material for the lift tower, which will offer a comprehensive view of the valley. The tower will also hold the stacks of the Spa and restaurant co-generation system, and the antennas that enable the mobile communications network, video, satellite and Internet.

In an effort to include the residents in the tourism business, the hotel rooms are located in the private owned mills. While the improvements in energy consumption reduction and the building of wetlands are not mandatory, only the resident that improved their land fulfilling all the requirements are eligible to take part to the “spread hotel”. That means that they can either host tourist in their mills, or in small prefabricated wooden cells in their plots. If the owner stops complying with the environmental policies, the wooden cells can be easily removed. Tourism becomes thus an incentive to improve the private owned lots and buildings. At its maximum expansion, the “spread hotel” consists of 16 guesthouses lodging 50 tourists, while the central building restaurant will hold up to 60 seats.

Sixth factor: renewable energy

Energy consumption reduction is just a part of the actions that can improve the sustainability of the new activities. The peculiar geography of the valley allows for the production of energy, which needs a proper physical infrastructure, becoming then another driving force in the project.

A share of the waterflow is be channelled out of the riverbed in an open conduit upstream of the Cala Casu bridge. The canal follows the road at an altitude of 350 m. for about 400 m, bringing the water to two detention reservoirs (about 7,000 m³). The water then enters a steep pipe (Φ 200) connected to a small Pelton turbine. The 60 m elevation allows a hydroelectric production of 30% of the valley total needs.

Another 50% of the valley energetic request can be meet by the already mentioned biomass-fuelled small stations for the production of hot water capable of serving groups of mills. The biomass comes from the reforestation area extending uphill on the west side of the valley, along the main access road.

Water and biomasses alone cannot produce the amount of energy needed to power the spread-out hotel within the valley. To reach an economic self-sufficiency (that is, the sum of the PV production and of the related economic incentives balance the costs of electricity consumption) 520 m² of photovoltaic panels are needed, mainly located on the public buildings and on the guesthouses in the lower part of the valley, where the gentler slope of the surrounding reliefs allows more solar radiation.

Combining waterpower, biomasses and solar energy the valley could become almost self-sufficient. This goal further contributes to make it attractive to new forms of environmentally conscious tourism. The overall need of electric energy could be met for about a half by the use of

biomasses to heat household water, and for the rest by a combination of waterpower and photovoltaics.

Conclusions: local society involvement and collective management of landscape and design

We have previously marked that the San Lorenzo valley is a neglected and marginal landscape, an edge landscape between different situations in temporal, spatial, functional, and productive terms. This edge condition allowed and suggested experiment the integration between urban and environmental processes, new forms of sociality, as well as illustrated in literature regarding the in-between areas.

Moreover, if landscape is the product of continuous shifting between perceiver and perceived and a mental construct that fluctuates incessantly between individual and collective dimension, cannot be crystallised by means of a restoration of built heritage finalised to mere contemplation or to bare tourist consumption.

The landscape exists only if there are inhabitants that live in it and transform it, with different degrees of intensity and permanence, being resident, travellers, tourists. For this reason, the involvement of local society is essential: not only for enhancing landscape but also for the enhancing environment and built heritage. Without an active role of local society and its institutions in a restoration process, landscape, environment and built heritage risk to be distorted by the processes of privatisation of space to the detriment of the public one, more and more unsustainable institutionally, of commercial standardisation of places for selling and consuming.

Again, the environmental sustainability challenge cannot be approached merely by means of technological innovation or by simply reducing consumption, without re-considering the spatial organisation of our life and the transformation of individual and collective behaviours.

Thus, this project provides immaterial actions on the local population in addition to material actions on the physical space.

The involvement of local society in the implementation and management of actions and functions expected by the project is a way to nourish a sense of attachment to the place and the desire to take care now and in the future.

In particular, the owners are encouraged to refurbish the existing mills according to the guidelines provided by the research “Regeneration project of Osilo public spaces within principles of energy efficiency” (Spanedda 2007)—funded by EU’s “Campaign for Take Off” of renewable energies—and will regenerate their land lot by removing waste material, building adequate fences, etc. Who accomplishes to these measures will become eligible as

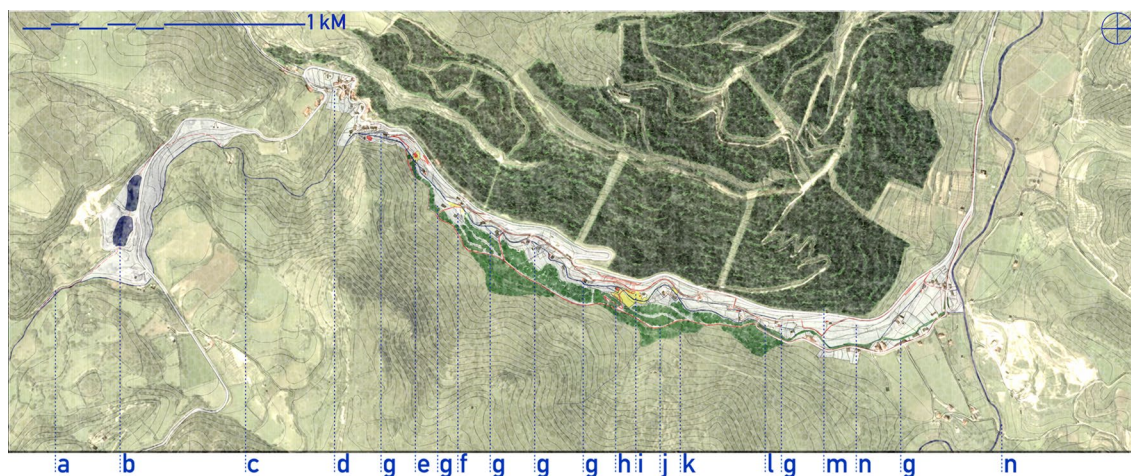


Fig. 1 General plan **a** San Lorenzo river; **b** detention reservoirs (former quarries); **c** Pelton turbine; **d** San Lorenzo a Monte; **e** abandoned mill refurbished as mentally impaired children rehabilitation center (proposal); **f** abandoned mill refurbished as spa (proposal); **g** groups of privately owned refurbished mills; **h** abandoned mill refurbished as central building of the “spread-out hotel” (proposal); **i** main parking area, water lift, access tower; **j** pedestrian paths; **k** reforestation to avoid slope erosion (proposal); **l** substitution of the narrow concrete channel with staggered gabion walls; **m** existing reforestation; **n** main road; **o** Silis river

member of the “spread hotel”, and can build guesthouse, a two-room extension of his house, with prefabricated wood elements. The reversible wooden building will be dismantled if the owner ceases its collaboration with the community, abandoning the use of biomasses and wetlands, and leaving the lot again.

More generally, we can say that virtuous behaviours in terms of sustainability (energy saving, waste disposal, etc.) are favoured by means of incentives which may be established from time to time. These incentives are determined according to the local and regional authorities.

The role of public authority and, more in general, the meaning that public sphere assumes in this project is very relevant.

The collective management for the San Lorenzo Valley is an hybrid, intermediate form that can be made practical in the management of the landscape and resources that characterise them. This form can be likened to the endogenous institution (Ostrom 1990) of management of common-pool resources or common goods through the promotion of participatory processes and effective governance.

Endogenous institutions are similar to forms of participated management that already exist for certain types of public services. The difference is that no “outsider” is engaged in the management who might not be interested in first person and would often represent ideological positions that can hardly be translated into operational terms. Instead the inhabitants, those directly interested, are involved: in this way, the sense of responsibility and commitment in management is acute (Cacciari 2010).

They are also an opportunity to test management forms in which local society has an active role, in order to avoid the landscape and environmental and cultural heritage of these fragile contexts being externally governed and treated as mere consumer goods.

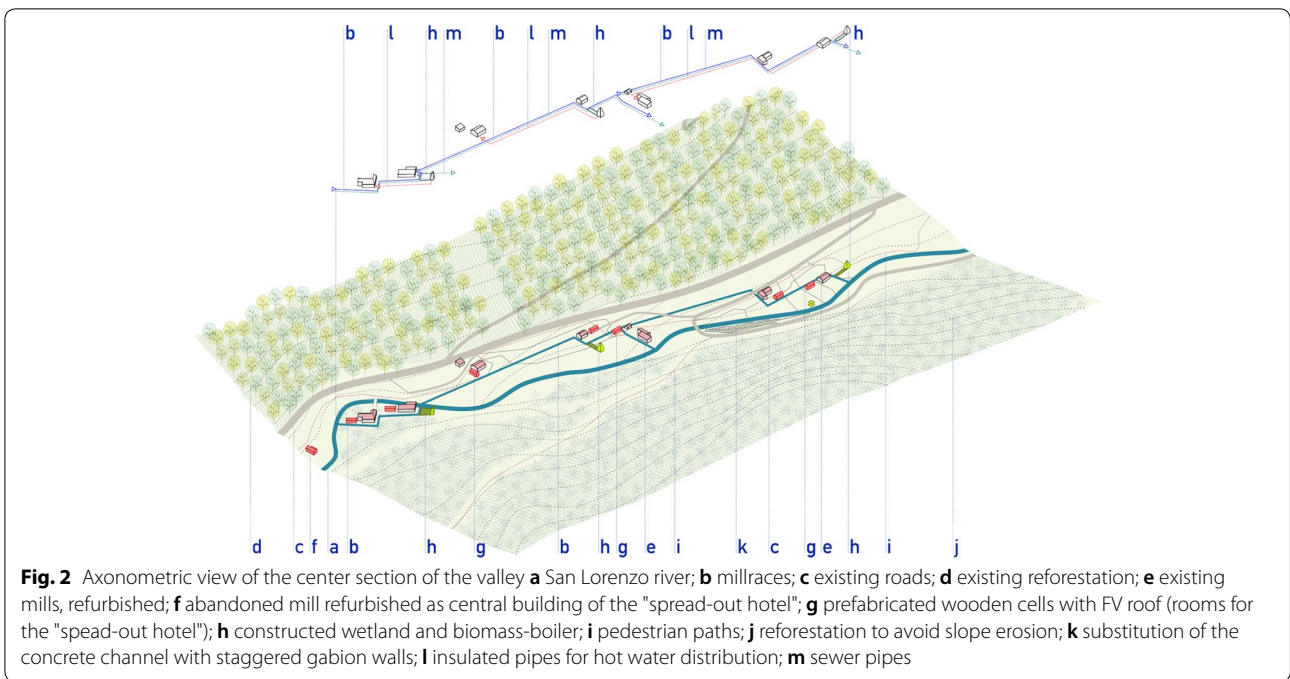
In this case it is possible demonstrate how the protection and management of the landscape and environmental resources should not be hetero-directed but contextualised, while responding to a philosophy and a common vision of the world.

The construction of an intermediate dimension between the public and private sectors becomes essential to build or rebuild the relationship with this place, to favour a sense of attachment and stimulate the desire to take care of one’s living spaces.

In fact, this proposal is grounded on the belief that landscape—and more in general the environmental and built heritage—is a common good, a collective good, perhaps the last public space that is given these days to a society, conveyed by our perceptions and cultural constructs, the reflection of our collectivity (Fig. 1).

In this sense the landscape cannot be “sold off” to private, at the cost of losing the overall objective of caring for it and taking responsibility for it, and of shattering its system of representation (Fig. 2).

If landscape becomes no longer freely available or available on payment and organised according to private models, it will turn into another globalised consumer good. Consequently, it will belong to the sphere of appearances, a pure scenario of our existence



(Osment 1998) and losing its own substance. Landscape is a concept we can inhabit, but not sell (Fig. 3).

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Competing interests
We declare that we have no competing interests.

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