A proposal for the constitution of a river park in Volla (Naples, Italy)

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Abstract

This study represents an alternative to the new General Communal Plan for Naples (edited in 1999), which plans the creation of a natural park in Naples’ oriental area; the practicability of this plan is in doubt, while a natural river park could be easily instituted a little above, in the territory of Volla Municipality.

Volla plain, a strip of plain sited between Naples and Vesuvius, was in the past ploughed by the waters of river Sebeto and by many other watercourses; it presented all the typical aspects of a swamp, and especially a great floral and faunal richness and variety. After reclaiming operations performed over centuries it has completely lost its original aspect, mostly in the last 50 years, because of the quick and absurd urbanization of the oriental Neapolitan hinterland, the partial industrialization of traditionally rural lands and most of all because of huge water extraction from the subterranean sources and aquifers which fed the water courses of the plain.

Nevertheless the site still keeps many elements of an environmental and cultural value that would be worth preserving and improving for a sustainable development of the area: typical cultures (vegetables), traditional and historical buildings (mostly farmhouses but also some remarkable monuments) and watercourses (four in total).

This proposal provides for the promotion and the exploitation of the area beyond the sustainable development principles, with the creation of a park along the still existing water courses and the reintroduction of the original flora and fauna, the restoration of the historical and traditional buildings used for receptive, tourist and recreational activities, and the improvement of the local productive activities introducing markets, fairs and village feasts.
Introduction

In January 1999 Naples' Municipality, Living Department, Urban Planning Service, published the variant to the Communal General Plan for the historical centre, and for the oriental and north-oriental areas [1]. This, together with the variant to the Communal General Plan for the occidental area, covers the whole communal territory, actually representing the new Communal General Plan for Naples after the 1972 one. In this plan a wide space is reserved to new-institution parks. In a city where, from the '50s, the communal territory has been thoroughly urbanized and built, mainly abusively, and where there is an almost total lack of green spaces, to plan such wide parks to break the continuity of the buildings represents a very positive sign towards a better quality of life in the city.

Among the new-institution parks planned by the Municipality, there is also “Sebeto’s park”, a park to be sited in the oriental area of the city, in a zone traditionally swampy but completely twisted by the Neapolitan industrial development and by its expansion, where once river Sebeto flew. This study wants to be in some way a “variant of the variant”, as it propose the creation of a river park northern of the area considered by Naples’ Municipality, in the territory of Volla’s commune, where the clear waters of Sebeto’s source still spring.

Actually from the hydraulic studies made to verify the practicability of the plan [2], results that, because of the imminent coming in operation of some sewer installations, what is still living of river Sebeto is inevitably destined to end its course in this installations, and so there won’t be anymore water below this point; therefore a “Sebeto’s park”, a river park, can only be planned above this point.

What is proposed in this study, then, is an environmental re-qualification of a wide area in Volla commune’s territory, being not only the creation of a “green lung” for man, where he could go to walk and to relax far from the stressing and polluting elements of the city even if not getting too far from the city itself, but also and most of all the re-constitution of an ecosystem by now destroyed, repopulating it with plants and animals disappeared. In fact a swamp traditionally constituted this area and today, even if it has lost most of its typical peculiarities, still preserves some valuable elements, both from a cultural and from a natural point of view, which with this proposal could be opportunely optimised.

Moreover wetlands are extremely various and diversified environments, among the richest of living form in our planet, both from a quantity and from a quality aspect; but they are also extremely fragile environments, sensitive to every kind of disturbing element from the outside, and so they are nowadays very rare, most of all in the industrialized countries, where they have been greatly exploited for several purposes, to conquer wider soils to agriculture, for hunting and fishing, or as a source of materials and energy for the industry. As a consequence in Europe, where anthropization is very extended and all the land is densely used, and where moreover hunt has a long tradition, intact wetlands are impossible to find. Until the beginnings of 20th century wetlands in Europe were still very vast territory’s portions, but it’s calculated that in the last fifty years
almost half of the wetlands has been destroyed to leave place to metropolitan areas [3].

For these reasons in Europe wetlands, particularly as wild birds habitats, are protected by Communitarian laws and by international treats, particularly by the 1971 Ramsar Convention (signed also by Italy in 1976) and by CEE directives 79/409 e 92/43.

Figure 1: Naples’ Municipality variant to the Communal General Plan for the Oriental area: in back the new-institution parks [1]
Territorial ambit of the study

Volla plain is a strip of land sited east to the city of Naples. Historically it has always been characterized by the presence of a great quantity of water, both in the form of water sources and subterranean water flows and rivers. Many subterranean water courses, as a matter of fact, gushed out in this plain, which was enlivened also by the floods coming down along the slopes of the Vesuvius and of Somma Mountain and by the numerous ditches and channels dug during the centuries by the work of man.

Among the sources which enriched the plain, the most important was the Volla (or the Bolla), which named the whole area: it furnished potable and sweet water which has supplied the city of Naples with water for about two millenniums by the means of the homonymous aqueduct. Nevertheless not all the water of the source was canalised toward the aqueduct: a significant share of it was let flowing through the plain where, together with many others, it generated several water
courses, the main of which was Sebeto river [4, 5, 6]. Therefore the area has always presented the characters of a swamp, and this was the reason why it represented the natural eastern border for the expansion of the city of Naples for centuries: until fifty years ago Volla plain was scarcely populated; there were a lot of inhabited centres but all of little entity: mostly they were settlings grown up along the main roads, about the main resting places or around the main farms [5].

Despite its fame of an unhealthy and unwholesome place, it was a highly productive and remunerative area. For centuries the wealthiest classes, mighty feudatories or rich monastic orders, which rented them to the farmers, have possessed these lands. The productive activities dealt here for centuries were flax and hemp maceration, vegetables cultivation and milling: water richness supported these very remunerative activities, the main of which was flour production. Besides, in the 19th century Volla plain was a royal hunt area: Ferdinand Bourbon the 2nd had here one of his hunt reserves thanks to the great quantity and variety of wildlife that the swamp sheltered.

Claiming operations in Volla plain have been carried out at different times between the 13th and the 20th century, financed by the several monarchs which succeeded one another to the government of the Neapolitan reign (Angioins, Aragoneses, Spanish viceroy and Bourbons), but most of all carried out by the patient work of the plain’s inhabitants, which canalised the waters digging channels for the waters flowing and the fields irrigation. Nevertheless the claiming operations only ended at the beginning 20th century [8, 9, 10, 11].

Degradation and development possibilities of the area

During the years Volla plain was subject to considerable alterations, both natural (mainly floods and volcanic eruptions) and human; the swamp has been progressively claimed during the centuries, with inhabited centres progressively developing in the claimed areas. Particularly at the beginning of the 19th century it became the natural outlet for the expansion of the city of Naples. Moreover with the demographic and industrial development of the city after the Second World War, the oriental area has become also the seat for many industrial settlings, which have completely perverted and twisted its original characters. Nevertheless the northern part of the plain, pressed between the centres of Ponticelli and Casalnuovo, has preserved a rural character, and the vegetables, cultivated here for centuries continue to be cultivated.

Figure 3: A view of Volla plain with the Vesuvius on the background where it can be seen how it has preserved its rural character.
The water of the plain, so abundant before, has been pumped up both for domestic and for industrial purposes, beginning to lower; the great amount of pumped water made the sources dry up or subside, contributing to the lowering of the soil; the river, loosing most of its natural sources, is now fundamentally a draining channel for waste waters.

Nevertheless something has been preserved of the many original channels, mostly in the northern part of the plain, which still keep an agricultural character: there are still Volla river and three channels (Royal, Cozzone and Azure). They are considerably polluted because they are the natural destination for all the wastewaters of the inhabited centres and of the cultivated land. It exists a depurator on the Cozzone, but it doesn't work. But this situation is not irremediable: a new sewer system is being built near the channels to collect all the waste waters and deliver them to a new depurator, partially already working [12].

Volla source has not dried up, but the water it furnishes is not drinkable anymore because it's too calcareous: part of it is canalised for industrial and auxiliaries uses. Very easily its waters could be used to enliven again and completely the few still existing channels. It's obvious that after all the claiming operations carried out during the centuries with a very high waste of energies to transform the unwholesome swamp in a always more fertile land, it would be insane to re-establish the situation just the same as it was in the past, but it's not excluded that in the future, giving water again to the channels, it would be possible to restock the plain with a great richness of wildlife.

Besides the few watercourses already mentioned, Volla plain still preserves in a state of great degradation or of complete ruin numerous prestigious buildings that would be worth restoring.

Where Volla source gushed out in the 16th century was built a construction, named Water House, in which a marble distribution device was located to divide the source's waters between the aqueduct and the swamp; the major of Naples was the only one to own the keys of this building, but it was subject by a lot of encroachments by the plain's farmers and millers who claimed more water. The first news about Casino Patrizi, afterwards become a royal shooting lodge, and still existing, date back to the 18th century. There are also many 19th and even 18th-century farms, with a considerable architectonical quality, and finally some of the numerous mills once existing, even if they have been highly modified and adapted to different uses.

All these buildings are in a very poor state: they are completely empty and abandoned, or they have been integrated to transform them in houses without a restoring project or even the simplest maintenance.

The projective proposal of the river park

Where it has not been run over and wiped out by the edification, the agricultural area has preserved a great morphological homogeneity and some prestigious characters that would be worth exploiting, emphasizing and promoting. There are still naturalistic elements with environmental values, such as the Volla source and the few channels (even if defiled), architectonical elements with historical and
architectonic values (even if abandoned and ruined), productive elements with typical and traditional values, such as the secular vegetable production.

![Figure 4: The existing and under-construction sewer systems in Volla plain](image)

All these elements should be improved and increased, not only with an operation of environmental healing in order to guarantee their protection, but also with an
of the plain's territory, but a real natural oasis will be created, being visited and lived by man, and so capable of creating an immediate positive influence on the local inhabitants.

In fact the park won't be just a natural zone, but essentially a tourist, recreation, receptive, and as a consequence productive zone. Only guaranteeing an adequate economic income the park can be hoped to work. So the park must be lived both by the local population and by the visitors thanks to several productive plants and functions compatible with its nature and with a low environmental impact.

First of all the park will be visited by the means of three kinds of routes: pedestrian, cycling and horse paths. They won't be separate from one another, but contiguous and connecting; they will so constitute a real equipped circuit, inside which several services will be located, such as resting areas, picnic lodges, benches et cetera. In the main junction along the paths there will be snack-bars with toilets, shops selling typical local products, naturalistic material and tourist guides, and also points to rent and to deposit bicycles and to make horses rest. In one of the farm houses there will be a stable with horse-riding instructors for the rent of horses, horse-riding lessons and horse-riding escorts.
operation of integrated conservation to guarantee the social and the economical raising of this area and of its population.

This proposal plans first of all the getting in function of the sewer channels already planned by the Municipality so that the waste water won’t defile the natural channels anymore but will be properly delivered, and then the restitution of the water to the natural channels, letting flow the source’s water in them without conducting them artificially.

Along the water channels some respect-areas are planned, with the width of 150mt per shore (as prescribed for environmentally relevant water courses by the “Galasso law” n°431/1985) where new constructing will be strictly prohibited. These areas will constitute a green belt, recovering the original natural habitat.

The vegetal essences to plant won’t be casual, but opportunely chosen among the ones which anciently populated the plain; moreover, as in nature disorder and variety prevail on order and monotony, to re-naturalize these green belts will be chosen many different species, alternated to one another; finally, as along the natural water courses vegetation is disposed in different typologies depending on the proximity with water (divided in aquatic, herbaceous, shrubby and arboreous while proceeding towards the extern), the vegetal re-population will follow the same scheme. So the following essences are proposed: among the aquatic plants the water lentil, the water ranunculus, the water lily and others (alismataceae, ranunculaceae, meniantiaceae and nymphaceae); among the herbaceous the calla, the yellow iris, the false nettle, the snapdragon and many others (crociherae, compitae, lyliaeae, malvaceae, ranunculaceae, iridaceae, araceae, ericaceae, lentubulariaceae, scrofulariaceae, labiatae, borraginaceae, liraceae, rubiaceae, enoteraceae, geraniaceae, ombrelliferae, leguminosae); among the typical hydrophilic plants reeds and rushes (buhomaceae and typhaceae); among the shrubby all the species of willows, aspens and poplars (populus and salix); among the arboreous various species of alders (alnus glutinosa and alnus rubra), of eucalyptus (eucalyptus dalrympleana and eucalyptus pauciflora) and of pines (pinus pinea, pinus pinaster and pinus halepensis).

Plants will be used also to consolidate the channels shores; in fact, where necessary, to reinforce them some intervention with the environmental engineering techniques will be made. Where, inside the respect-areas, the land is densely cultivated or constructed, the current uses destinations will be kept, but the construction of new buildings will be as well prohibited. Inside the respect-areas of course every kind of hunting and fishing will be strictly prohibited, while public will be allowed to visit the parlq with a series of other collateral activities that will be analysed in the following paragraphs.

Another essential step for the zone’s re-naturalization, immediately following the vegetal re-population, is of course the zone’s re-population with the ancient animal species. Among these, ichthyic species such as eels, trout, carps, pikes and tenches; amphibious such as frogs (which are still very numerous in the area) and toads; mammalians such as otters, hedgehogs, hares, moles, bats and foxes; and most of all birds, both nesting and passing, of many kinds: passeriformes, anseriformes, gruiformes, ciconiformes, galliformes, striigiformes, falconiformes. In this way not only will the natural habitat re-introduced, even if in a limited area
It must be also considered that rural areas, even if partially modified in the last fifty years by the industrialization and modernization processes, still preserve local peculiarities able to stir up curiosity, charm and fascination on the urban public: the rural tourism, discovery of the latest years, could be a way to guarantee the economical raising of this area. So this proposal plans to restore the ancient farm houses, restructuring them and adjusting them to modern standards, in order to use them for agricultural tourism; in this way a double profit will be reached: it will be created a productive activity with a low environmental impact and it will be restored prestigious buildings that, abandoned to their own destiny and without a function would irremediably ruin. Moreover, the main farmhouses, with wide courtyards, will be exploited to perform in the open in the summertime, for folkloristic shows and for ventas of typical local products.

Another fundamental point, in fact, is to support the local agricultural production, to be promoted by the sale of typical agricultural products to the tourists inside the park and by the creation of periodical markets and fairs.

In conclusion, this proposal is believed to be a valid way not only to reach an environmental re-qualification of Volla’s area, but also to improve and to promote the economical, social and cultural development of the whole community.

References