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Soil Cadastre in Italy for Sustainable Development: the Urban Soil Cadastre (the Second Branch)

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Abstract
The description of the second branch of the Land Cadastre concludes with the description of the structure of the new inventory Land Cadastre. The principles applied are always the same: computer node where all the information present in the various municipal, regional, state, reclamation consortia and research centres can be entered. The scheme used in each branch of the structure is that of the current Cadastre. In this work the guide is the Urban or Buildings with the two elements the Particle Map Sheet and the Cadastral Certificate. The cultural intensification is the first step and concerns both the cartographic part and the areas of the condominiums outside the buildings, and the particles created representing the streets, squares, junctions of the urban agglomerations. This branch also includes all communication routes such as: stations and railway lines, airports, motorways and service stations, and various roads. Within each territory are identified the particles of the Urban Land Cadastre characterized by uniformity in terms of environment, territory and use and management. In addition to the units, there are the sub-parcel units indicated with a progressive Arabic subscript number. The inclusion of all the properties of the parcel in the current certificate allows the transition to that of Urban Soil. At that point it becomes multifunctional because it can be used by all professionals in the area, by the land manager and to assess the sustainability of uses (main objective of the new inventory). Sustainable uses can be easily disseminated because it is possible to communicate with those who manage the use. Sustainability

is linked to the landscape, local slow tourism and by converting the use of fossil fuels with renewable energies (valorising natural resources such as the sun) in condominiums, industries, shopping centres and public administrations, it is possible to create the least onerous management and more competitive businesses and therefore able to conquer national and international markets. All this leads to an improvement in the liveability and security of urban areas.

Keywords: urban pedodiversity, Urban Soil Cadastre, sustainable use and management of urban soil, clean energy production, cultural value of soil.

Introduction

The Land Cadastre was initially proposed for areas outside the urban context (Raimondi 2017). Subsequently, the second branch constituted by the Urban Soil Cadastre was inserted, which derives from the proposal to integrate (enrich with information) the Buildings or Urban Cadastre (Raimondi 2018). It consists of all those areas at the service of the community for residential, administrative, commercial, industrial, communications, hospitals, schools or leisure (sports and golf courses). The third branch of the Land Cadastre is dedicated to the conservation of pedodiversity and cultural values (Raimondi and Egli, in progress).

Until a few years ago, the Agronomist in urban areas was only concerned with the estimative aspect of buildings, areas included in a manufacturing plan and rarely with the direct management of green areas. The architect or engineer who designed the new urbanized areas asked the nurseryman for advice directly, who in relation to people's needs (e.g. if the aim was to have a grove, proposed some species generally available conifers with a good growth rate), but none in the planting phase thought about the distance of the adult plants (Photo 1).

The first time the writer came into contact with an urban area to be designated as a Public Park (Urban) was during the mid-nineties of the last century. It was an area on the outskirts of a village on the hillside of Palermo that had previously been used partly as a landfill and partly as a pasture for farmers. The whole area was also used for animal fairs (as in many countries in western Sicily). In the landfill was found everything and often burned during the summer period. In this last part the earthy mass was well structured, dark (rich in organic substance) but inside there was everything: glass, fragments of bricks, iron... It came from the old garbage dumps, which in every country the community used as a landfill. Before the development of mechanization, the cultivation operations in the fields and the transfer to the different districts were carried out by mule.
Periodically, the mass was also excavated, taken and used to fertilize tree crops (olive groves) and peri-urban soils for vegetable gardens or gardens (citrus groves and other fruit trees). After that experience, several works were carried out in the urbanised areas of the coastal strip of the province of eastern Palermo (Dazzi *et al.* 1997). In the last 15-20 years, in which the effects of climate change have been more frequent, due to heavy rains and longer dry periods, the attention for urban areas has increased more and more as roads often turn into rivers. The urban whitewater disposal network is no longer able to receive and dispose of run-off. In some Sicilian cities white and black waters do not flow in separate pipelines but in one. In these cases, the streets during the rainy events become a little more intense and even smelly.

Also in Sicily, some watercourses that crossed the villages were canalized and covered and the walkable area that sprang from the roof is used as a parking lot or road and in some cases a building was built on it.
During the urban development of the cities recorded in the seventies and eighties, palaces were built but the spaces dedicated to street trees were considered a waste of building area and therefore in many cases the flowerbeds of the avenues were reduced in width, to the indispensable for the trunk of the adult plant, but pretended to have majestic trees (Photo 2).
The same thing happened on roads and motorways with Pinus halepensis (sometimes Pinusa pinea) or Eucaliptus camaldulensis (Photo 3). In these flowerbeds of about one and a half metres the roots lift the roadway and the road manager has to intervene frequently with the restoration of the asphalt mat (Photo 3).
In cities and towns all over Italy, today many trees have long since reached maturity as the lifts date back to the first or second post-war period of the last century. Others were planted in the years of economic boom and are about fifty years old. Plants that are too high, during rains and winds slightly more intense than normal, show a tendency to be cut down.
The attention of the writer towards these territories over time has increased more and more to propose the revision of the Buildings Cadastre, transforming it into an Urban Soil Cadastre (computer node; Raimondi *et al.* 2020) aimed at the choice of species in relation to the soil and climate context and a management in harmony with the site (irrigation, pruning, milling or other) in order to achieve a sustainable urban green (Brundtland 1987, Raimondi *et al.* 2019).

The structure of the Urban Land Cadastre

The Urban Soil Cadastre covers areas that have the function of serving the community of a territory (residential, commercial, welfare, leisure, craft and industrial). Therefore they should meet the needs of liveability for the community and security. The present urban soil has many functions:

- the eco-systemic functions of the soil with the cycles: hydrological, organic matter, all the elements used by the plant;
- that of supporting the plants that improve the aesthetic aspect, the welcome, the amenity (floral scents, green colour and harmonious shapes);
- in the arid and warm arid environments the tree-lined soils form shaded areas both for parking cars and as a meeting place for people of a certain age (social function) and also to cool buildings.

Tree-treeing also has an obligation: to make places safe for people, machines and infrastructure. Consequently, if they are not well planned and managed in a sustainable way (according to good practices), the place can become a trap for everyone and a very expensive and permanent liability item in the economic balance sheet of the community or the managing body.

In the urban area the soil has a covering action, protection because the surface is not disturbed by deep agricultural operations (burglary) and can preserve the historical, architectural (through the style of the remains of buildings) and archaeological memory of past civilizations (Egli *et al*. 2013). The structure of the new inventory of the Urban Soil Cadastre provides:

- the Map Sheet: the proposal retains the current cartographic cut of the particle map sheets (it is all computerized!);
- the Urban Land Cadastre Certificate: in addition to that of the real estate units (houses, buildings and apartments) a certificate has been provided for each homogeneous area outside the buildings (integrated inventory). This concept refers to street trees, roads, gardens, squares, junctions and external roads (motorways, state roads, provincial and municipal roads).

The soil represented by the urban map sheet, from the pedological point of view (Soil Survey Division Staff 2014) is included in anthropogenic areas and often considered, in Soil Maps, as tares. From the point of view of soil assessment (Klingebiel and Montgomery 1961) the urban soil is included in the eighth Class representing the Extra-Agricultural Order. These are areas that have a service function for the community: residential (buildings in reinforced concrete, in tufa ashlars, in stone and plaster or only in stone); roads (with or without trees); condominium complexes (buildings, yard, flowerbeds, football field, golf course); landfills, lakes, rivers, airports, railway stations and railway lines, shopping centres, fruit and vegetable markets, villas and parks (holiday homes, urban park, archaeological, mining).

In fact, there is often no homogeneity within each particle unit today; but completely different worlds coexist in which often the soil is partly built (building), partly continues to perform certain eco-systemic functions such as urban parks and partly transformed by man, creating tree-lined avenues, isolated trees and trees; parking lots with reinforced concrete, asphalted or beaten earth covered with holes; poles for pub-

lic lighting, power lines for the distribution of electricity (in some cases placed on the sidewalk). It is precisely in the villas and historical parks that the cadastral land parcels, with soil not used for agricultural purposes, continue to perform its eco-systemic function and only in some points of the surface completely loses it as pylons (for the transport of electricity) and road pylons, or partly water network for the transport of drinking water or irrigation, black and white drainage water underground. In the latter cases the soil retains part of its production capacity. In some cases, the branches of the hydrographic network can cross built-up areas with: valleys, streams and rivers. Therefore, for a sustainable management of the areas not occupied by buildings, it is necessary to make a more detailed description highlighting the areas where soils lose their eco-systemic functions from those that continue to express them in an excellent way and specifically maintain the environmental balance.

Considering a condominium complex (of those born from the eighties onwards), in addition to the building with the apartments of civil dwelling, around generally have a condominium area divided into: parking lots, flowerbeds, playground and internal road network. In these cases each area performs a different service and therefore in order to recognize the ecological-functional aspect it is necessary to subdivide the area of the cadastral parcel (outside the building) in the different sub-areas highlighting their use and ecological effects. In the plan of the area (reproduced on a larger scale) the different uses should be reported with their area, with a specific cartographic symbology inserted in the legend how: P = Parking area; G = Playground; A = Flower-bed; R = Internal road network.

In the case of a specific parceled use (and not in a single area) the sub-units should be highlighted using a subscript as: P1, P2; A1, A2.
Currently all these infrastructures are not shown on the map sheet and the parcel serving the building is white with an Arabic number.
The Urban Land Cadastre provides for the inclusion of all the information regarding the different uses of the condominium area (Table 1). In the map sheet, keeping the current cartographic representation, you should simply insert a hyperlink to the particle number, through which you should open an image with the same particle reproduced on a larger scale. The current Buildings Cadastre, while preserving the function of inventory of the urban heritage, by inserting other environmental, territorial and specific use or services information, is transformed into a multifunctional computer node. It becomes a computer system also environmental where the pedo-diversity of the areas outside the building could be managed in a sustainable way with the recognition of its eco-systemic functions. Today everything is ignored and sometimes, even if the greenery has a social function, condominiums are paying taxes while the area is in a state of poor management for the rather onerous expenses (tendency to degradation). Areas with a sustainable use and management should have been awarded a reward for both the safety and amenity of the land and the prevention of disasters (damage due to falling trees, for the reduction of surface water runoff and for the storage in the soil of organic matter and therefore the main gas responsible for the ozone hole).

Considering a flowerbed, sustainability depends on: choice and management of the species(s) and good agronomic practices applied in harmony with the volume of available soil mass. When the plant species has needs that are not met by the soil mass of the bed that has been assigned to it (generally delimited by small walls), because it is a living being, it will try to explore a larger volume, expanding its area around the trunk in a centrifugal sense. In the presence of deep soils with good ventilation (even if buried under a sidewalk) and absence of damage in adjacent areas: to sidewalks, roads, walls, buildings, white water and wastewater drainage system and in the absence of risks for cars and people due to falling trees, the use and management are considered sustainable. If, on the other hand, this is not the case, the formula: plant species or their unsustainable or unsustainable management should be applied. Using this assessment methodology, sustainable use of surfaces adjacent to buildings could be easily disseminated. The latter condition creates a territory with a high level of livability because some (very frequent) reasons of quarrels among residents inside the condominium and among people of adjacent condominiums are missing. In addition to the mapping of the subdivision of the external surface, there is a second planimetry (always on a larger scale than the urban map sheet) to show the infrastructural works placed under the track; each type of plant is inserted with the access point to the condominium, the crossing of the area and the arrival point (Photo 4). The plants can be divided into: drinking water; water for irrigation; electricity; telephone; black and white water pipeline and water disposal network

of the condominium park. In this case for each plant with a simple hyperlink should highlight the certificate of conformity with description of the work, type section and length with all attachments regarding the materials. This part of the archive aims to prevent all the disasters and accidents that often occur during the execution of certain works in the streets (gas leaks and water leaks).

Example of the type of use of the condominium area: greenery

Each flowerbed (unit or sub-unit) should be described starting from the soil mass of the soil by entering the representative type profile or borehole (Photos 5 and 6) in relation to the size of the area. Each profile or borehole should be accompanied by a campaign form and an analytical form. This is a work that should be carried out at the end of the construction of the building and in conjunction with the release of habitability.

The agronomist knowing the land masses, lithology, climatology and available surface has the possibility to plan the planting of the plants at lower costs than today because he finds easily available all the elements for the application of a soil evaluation system. This is a very delicate moment for tree plants, as a mistake could have considerable repercussions on the success of the planting, on the infrastructure, on adjacent buildings and on the management costs of the condominium in general.

The soils of condominium areas are often of anthropic origin and within the soil mass there is everything from coarse skeleton to residues of the pre-existing soil mass.

The public trees of the city

In this paragraph reference is made to the urban context of cities that can be distinguished into buildings (neighbourhoods) before and after the unification of Italy, or before the economic boom of the last century and after (the 1970s and 1980s). Generally in the oldest urban areas (not considering historical villas; churches) the greenery either does not exist or is mainly made up of trees in the middle of the pavement. In these cases the road and the two sidewalks should be included in the Urban Soil Cadastre as an urban particle and in the certificate all the environmental, territorial characteristics followed by the botanical species with the management indications should be included.

These are old plants in which growth is slow due to lack of brightness or trauma (breakage of branches due to the passage of trucks) or they can have a remarkable development going to take away the visibility of the lower floors of buildings. The branches often touch the walls of buildings. Around the trunk they generally have a surface area of about one square metre. It is well known that it is impossible for such a small surface of the pavement to receive and infiltrate such a quantity of water as to justify a growing season for a highly developed canopy. In fact, the roots of these plants with a tendency to a centripetal development, not being able to extend towards the wall of the adjacent building, are led to develop in the remaining three directions going to find the drainage network of white water and also that of black water. That's why some roads vegetate plants that have the same development as those of a forest. The difference, however, is remarkable: while the forest has the ideal environment,

the right one and their development harmonizes with the intended use, the same thing does not happen in urban areas where the intended use is residential (for people) and the plants have a function as furniture, safely. The latter aspect is often missing because plants sometimes collapse on parked cars and passers-by. Moreover, as they develop, the roots tend to occlude the light from the pipe of the plants, deforming and breaking it. The further consequence is the loss of liquid on the one hand (groundwater pollution) and the loss of functionality of the drainage system on the other because it no longer allows road water to flow freely. The roads then become rivers that hinder the circulation of cars and pedestrians with the risk of flooding of houses and depressed areas (road underpasses). Traffic goes mad in flooded areas with a decrease in the liveability of cities.

The design of sustainable masts in roads built before the economic bum (or before the unification of Italy), should be carried out both according to the characteristics of the land mass under the pavements and the volume that the roots can explore (to maintain sustainability), without damaging the plants (gas, electricity, telecommunications, water and sewage). Generally it is advisable, in Sicily both in the plain and in the hills, with strong summer aridity, to put in dwellings plants with development not exceeding 2.50 m and resistant to water shortage. To improve sustainability in some cases it is advisable to prune the soil (Photo 7). At the first signs of possible damage, the plants should be replaced with small ones (bushes).

In the neighborhoods built after the unification of Italy or after the economic boom the streets are generally wider

and the raised floors have the villas in front. The arboreal plants generally find the environmental conditions almost in harmony with their light requirements and therefore easily reach a remarkable development (if the soil is not limiting). The area becomes even more welcoming in the boulevards where in the centre there is a tree-lined traffic divider and laterally the two lanes (Photo 2). When pruning does not harmonize with the soil, climate and territorial characteristics, it can become unsustainable. The cadastral parcel of the Urban Soil Cadastre is always made up of the traffic divider, the two lanes with their respective sidewalks next to the buildings.
In order to avoid damage to sidewalks and roads (Photo 8) it is important to know the depth of the soil, the distance from the plants and the quality of the soil mass. The evaluation of the latter is expressed by the volume and its agronomic potential (Ronchetti 1966) and therefore the choice of the species with the most suitable habitus becomes an excellent practice (best practices).

Results

The Land Cadastre inventory is a multi-functional computer node because it could achieve different objectives by subdividing it into three branches: Urban, Extra-Urban and for the Conservation of the cultural function (pedodiversity, biodiversity and historical-archaeological). The third branch can also be valorized for the formation of future generations; in addition to the current ones. The more informed professionals contribute to a more responsible society. It is often the lack of knowledge of territorial operators that causes enormous environmental, territorial and human damage. In the initial phase

the new inventory is a data collection centre kept at municipal, regional, ministerial, European Union level, by Land Reclamation Consortia and Research Centres. The organizational system to be used for archiving is that of the current elements of the Cadastre: both the particulate cartographic cut (map sheets) and the Cadastre Certificate. In both with the convergence of all the data the final result would be an enrichment of information (particle cultural intensification). When fully operational the Land Cadastre could be of great help for all current administrations and also for research centres.

The condominiums built in the eighties have large green spaces and today are often in great pain because the plants planted then, are now adults. The management requires a considerable outlay and the interventions are reduced to a minimum, creating risks for the safety of those who frequent those places.

This work, after having defined sustainable use, aims to describe the second branch of the Land Cadastre, i.e. the Urban branch where the objective is to achieve a sustainable use of all the spaces present. This objective can be achieved by putting designers in the best conditions to work and users in the best safety conditions. In fact, the Multifunctional Soil Cadastre (Raimondi 2017) also provides that the soil of the flowerbeds maintains the eco-system functions. Specifically, multifunctionality is made up of all those aspects aimed at meeting the environmental, administrative, economic, cultural and social needs, present and future, of the community living in that territory (sustainable development). All sustainable uses could be spread, with this tool, everywhere in a relatively short time.

Conclusion

Some speak of crop intensification per hectare (Tagliavini *et al*. 2019). This is a view that does not consider the eco-systemic functions of the soil and environmental balances in a sufficiently adequate way. In fact, within the hectare, in some environments there is a certain soil uniformity, while in others there may be two or three types of soils. Consequently, it would be more appropriate to first intensify the pedo-climatic knowledge (cultural intensification by homogeneous area: the cadastral parcel) in order to make choices more in line with the soils present, with a management to be applied easier to identify and then spread. The combination of technical production factors to be applied can be more easily identified in this way and implemented uniformly. Another thing is the agricultural field into which a farm is divided. In extensive farming systems a field may consist of several parcels and therefore advanced systems for spreading fertiliser, water, herbicides and sowing should be applied.

Crop intensification per hectare or field is important, but after cultural enrichment of the (homogeneous) cadastral parcels to achieve simple and sustainable management.

Within the parcel of the Land Cadastre the condition of uniformity applies. If an agronomic practice has been carried out correctly the vegetation should theoretically have the requirement of homogeneity. If in a historical moment the vegetation is not uniform it means either that there has not been uniformity in the execution of the cultivation operations, or there has been damage due to animal pathogens, fungi, bacteria, viruses or plants (weeds) or it may be due to physiopathies. The latter are damage due to soil and climat-

ic (environmental) conditions such as: nutrient deficiencies, damage caused by root asphyxia due to prolonged over-saturation (Photo 9) or soil water shortage; or damage caused by cold (frost), heat (burns), salt (Photo 10), wind, hail, rain or flooding.

The current cadastral parcel does not always have the requirement of homogeneity, therefore it cannot be easily managed. This condition is very common in the mountains. If, on the other hand, it is homogeneous for: soil, lithology, climate, topography and destination of use, it also becomes easily manageable. The new existing information technologies and the use of a Geographic Information System (GIS) allow to easily achieve these objectives, i.e. the uniformity of the environmental and territorial unit. The practical effects would be considerable for the agronomist, the forester, the architect, the hydraulic and building engineer. In short, the professional, instead of using the copy paste in the design phase, would easily have all the elements available to create an elaboration consistent with the environmental and territorial characteristics of the area. If then, the person who realizes the works, works coherently to the project and also the person who manages the resources (natural and anthropic) is prepared the results will surely be the best possible. This is the entrepreneur at the highest level, speaking in economic terms. However, considering the basic principle of agricultural, forestry and pastoral activity, i.e. they are works that are carried out outdoors (not in a controlled laboratory) and therefore the climatic trend of the period always has a considerable influence.

Anyone from home or the studio should be able to print everything they need at that time (by selecting the necessary

information). The new inventory would result in a considerable bureaucratic simplification compared to current conditions, saving time and money. In fact, the designer to collect all the data today has to visit many offices or computer sites. The parcels of the Land Cadastre managed well, according to the requirements of good agricultural practices, would create a harmonious landscape without wounds such as landslides, floods, erosion furrows.

In relation to environmental and territorial variability, there would be a landscape mosaic or uniform expanses with leopard spots. In fact the landscape in some environments varies little during the year and over the years (these are the hot desert areas), all the others have landscapes that change appearance with the succession of the seasons. The climate changes taking place in some territories such as the south of Italy and the islands, at lower and coastal altitudes, determine very different landscapes, with intermediate seasons that tend to no longer exist.

The beauty of the landscape is an added value to the territory (Agricultural Parks) whose value should be considered among the deductions in the calculation of taxation (it is an asset available to all; everyone can enjoy it and at the same time an excellent system of prevention of environmental damage). If we also consider the possibility of a development in all companies of energy independence, the whole agricultural world could be easily relaunched on national and international markets (Yousef Mohamed *et al.* 2020, Raimondi *et al.* 2019b).

Fossil fuels used by city vehicles, boilers and industries release toxic elements (e.g. As, Hg, Pb) that are probably responsible for serious human diseases. Knowing how these elements

spread, how they are distributed and their fate in the urban environment would help to address the sustainable management of urban soils and gardens in relation to human health (Bini 2019). A switch to renewable energy also in cities would allow the elimination of pollutants and greenhouse gases. Cities could also greatly improve livability, as has emerged in recent days following the blockade of traffic and production activities, imposed in recent months as a preventive action to prevent the spread of COVID-19 infection.

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Photo 1. Trees with forked stem of *Pinus halepensis* interspersed with *Pinus pinea* due to planting errors (too thick) and management errors (wrong pruning) because the forking has not been corrected. The plants went to look for the light at the sides of the row.

Photo 2. Traffic divider too narrow with damage to the wall and the sidewalk (torn) and risk of lifting the road surface, already evident in some points. The plant species present is Ficus benjamina.

Photo 3. Traffic divider with *Pinus pinea* whose roots lift the asphalt and the managing body is forced to redo the bituminous mat frequently, with considerable running costs.

Photo 4. The visible trace of the location of the tubes for the passage of the optical fibre.

Photo 5. Drilled on the ground of an urban flowerbed. Note the dark brown colour of the soil mass due to the accumulation of organic matter. The plant species present is *Ficus benjamina*.

Photo 6. Drilled on the ground of an urban flowerbed made about three decades ago with 2 types of soil masses.

Photo 7. Urban street trees of Judah tree (*Cercis siliquastrum*) notice the controlled development with pruning on calcareous land masses (sustainable trees). The choice of the species was suggested by the writer, about 25 years ago.

Photo 8. Destruction of the asphalt of the road for the lifting operated by the roots.

Photo 9. Two olive trees dead from root asphyxiation caused by seasonal groundwater prevented in the runoff by a driveway.

Photo 10. Damage caused by the wind coming from the sea carrying salt.

Logo of Territorial Agency	Soil Cadastre Urban Request data	Municipality of ……. (Code : xxx) Province of ……	
	Name and Surname _____ Street _____ City _____ZIP Code_____ Tax Code_____ 1ST ACCESS	Sheet : 5 Parcel : 9 Entry : 2 2ND ACCESS	Cartographic data Official Italian Cartography : F. (Sheet) 258 II NO Corleone (scale 1:25,000) Regional Technical Map : _____(scale 1:10,000) Map Sheet : _____ (scale 1:2.000)

N.	PERSONAL DATA	TAX CODE	ACTUAL RIGHTS AND DUTIES
1	Condominium constituted in …… on 22/02/1996 resident in …… in Street ……., 2	_____	Ownership 12/12
2			
DATA RESULTING FROM :	ISTRUMENTO (PUBLIC DEED) of 21/03/1995 Transfer of registration n. 2500 1/1995 in deeds from 10/08/1996 (record n. 300132) Collection n. 52893. Rogante : CELESTE Aida. Offices : PALERMO. DIVISION		
MANAGEMENT *(1)*	Managing director 3RD ACCESS		

Identification data						Resulted data
Sheet	Parcel	Subparcel	Part	Central point Coordinates *(2)*	Neighborhood	Splitting up
5	9	A	----	4TH ACCESS	Libertà	1998

Enviromental data									
Climate (Thornthwaite) *(5)*	Lithology *(6)*	Soil Taxonomic family *(7)*	Altitude band (m a.s.l.) *(8)*	Mean slope (%) *(9)*	Predominant Exposure *(10)*	Rockiness (R) Stoniness (S) *(11)*	External drainage *(12)*	Position of temporary hydrographical network *(13)*	Solum thickness (cm) *(14)*
C_2 B_1' s b_3'	Calcareinite	Entisol : T U, f, m, m	Min 35 Max 22	3	North	R = 0 % S = 5 %	Normal	Missing	100

Territorial data						
Mountain *(15)*	Constraints *(16)*	Access roads from the town of …… National B1, provincial B2, municipal B3 *(17)*	Water availability *(18)*	Pollution *(19)*	Landscape *20*	Unit of Use Capacity (Land Capability Classification) *(21)*
No (Plain)	Ab, A1, Aa	B1 = SS 118; B3 ……	No	No	Condominium green	I

Rating data								
Intended use (Quality) *(22)*	Specifications of use : crop and class or other *(23)*	Physical sustainability of specific use *(24)*	Requirements (C) *(25)*	Area m^2 ha are ca *(26)*	Income Advantages	Income disadvantages Yearly computation € *(27)*	Tax deduction (D) € *(28)*	Tax Addition (E) € *(29)*
Masts	*Pinus halepensis* 1	Sustainable	C1 (Annual prunings)	0 01 00	100	50 (cracked wall)	D3 50	- -

Table 1. Example of application of the concepts of the Urban Soil Cadastral Certificate to a particle of a condominium.