

## *Blue and green infrastructure Experiences of foreign cities*

# Rome, a green city

## The example of Appia Antica Regional Park

### 1 Rome, a green city

#### 1.1 A city steeped in history

Rome is the capital of Italy and of the Latium (or Lazio, in Italian) region. It is a vast municipality covering 128,500 hectares (or 12 times the size of the municipality of Paris, at 10,500 hectares).

The urban centre of Rome lies within a ring road known as the Grande Raccordo Anulare (GRA), built in the 1960s to combat vehicle congestion. This vast ring road, measuring 10 km in radius, is situated some distance from the city centre and marks and

boundary between the dense urban centre and the countryside around Rome.

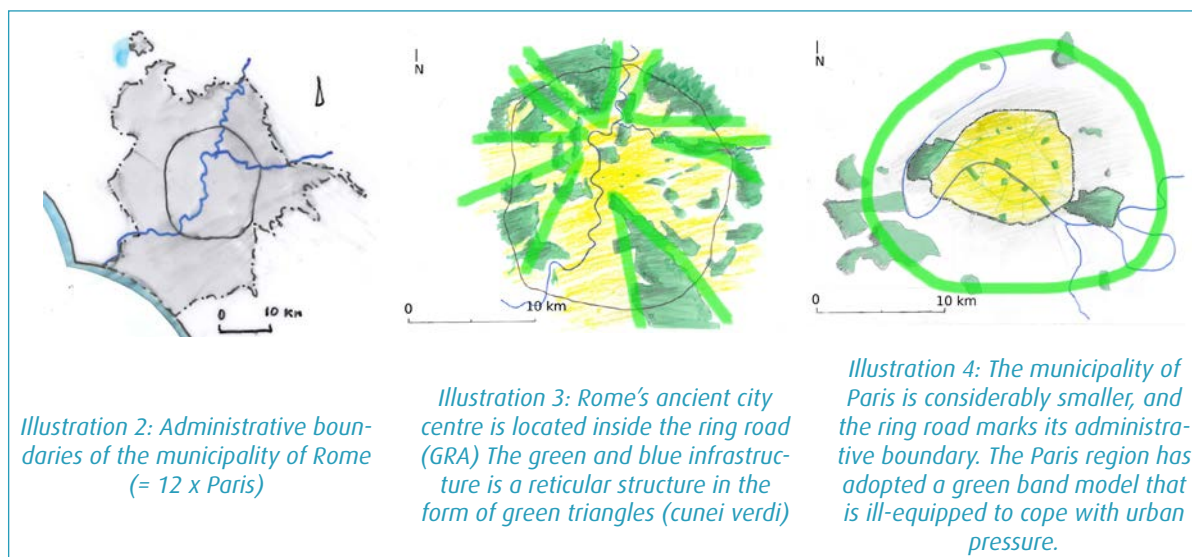
Known as Agro Romano, this countryside is characterised by rustic, undulating landscapes shaped by agricultural activities (polyculture and livestock farming). These vast green expanses form a rectangular model with finger-like prominences that protrude into the city along a north-south and east-west axis.

This planning model is different from the approach adopted in the Paris region, where farmland and



*Illustration 1:  
The Appia Antica  
Regional Park is  
designed to preserve  
the Agro Romano  
from urban sprawl  
and protect farming  
activities.*

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Short version



forests form a green band around the capital (see illustrations 2 and 3).

In the second half of the 20th century, Rome experienced sustained population growth and a shortage of affordable housing. In 1975, one third of the city's population lived in illegal homes built without planning permission and outside urban areas (as set by the 1962 Master Plan). The urban surface area of Rome has doubled between 1962 and the present day.

## 1.2 Green and blue infrastructure At all spatial scales

Protected areas, urban parks, archaeological remains, farmland and urban wastelands blend seamlessly into Rome's landscape. These unbuilt environments – vestiges of a rich past – are afforded varying degrees of legal protection. They form a blue and green infrastructure, providing ecological continuities on varying scales across the territory – rows of trees and green spaces dispersed like stepping stones across the urban fabric. The age of the green spaces, the sheer variety of plant species and the low-maintenance upkeep approach mean that Rome's urban areas are rich in biodiversity.

### ■ At city-wide scale

#### *Vegetation at archaeological sites*

The ruins and archaeological remains of Ancient Rome (Forum, Circus Maximus, Terme di Caracalla) occupy significant space in the city centre (totaling 186 hectares). Rome's Archaeological Super-

intendency department manages these sites to varying degrees of extensiveness, according to their individual popularity and interest. These ruins form green spaces within the city itself, and are fully integrated into the urban fabric. They are lawned and tree-lined oases of nature, providing functional connections with other natural and rural spaces in the suburbs of the city.

#### *Urban parks of historic villas*

Villas (Medici, Farnese, Este Tivoli, Borghese, Ada, Doria Pamphili) built on the tops of hills and outcrops are surrounded by ornamental gardens and wooded grounds (many of which are now public parks). These properties are oases of woodland that help to enhance the appearance of Rome's landscapes and contribute to the city's atmosphere.

### ■ At conurbation-wide scale

#### *The Tiber and the Aniene*

The Tiber, and its tributary the Aniene, run through the city of Rome. In the city centre, the banks of the Tiber are characterised exclusively by stone and concrete. The river is bordered by steep-sided embankments that contain the river during high tides. The embankments feature linear plantations consisting of plane trees, stone pines and hackberries.

#### *The Agro Romano*

Today, the Agro Romano is rich in biodiversity, with the juxtaposition of wetlands, farmland and copses providing shelter and cover for specialist species. The profusion of borders and the multitude of biotopes make this a haven for species mixing.

Despite unchecked and often illegal urbanisation, the countryside has a strong presence in the urban landscape. Even today, these parcels of countryside in the city belong to wealthy families, foundations and religious communities (Vatican). The presence of vast estates and dynamic farms has protected the Agro Romano from urban erosion.

## ■ At province-wide scale

### *Protected areas managed by Roma Natura*

The municipality of Rome features an archipelago of natural spaces, farmland and forests, comprising 16,000 hectares of parks, nature reserves and landscaped sites dotted across the territory.

The majority of these protected areas are located within the GRA, i.e. within the urban fabric of Rome itself.

Roma Natura is an independent public agency that manages listed natural and rural spaces in accordance with Lazio regional law no. 29/1997. It is a natural protected area management body with regional competence, funded by the municipalities of the province of Rome and by the region of Lazio. Rome City Council contributes 35% of the agency's annual budget.

Roma Natura manages: 14 regional nature parks, 1 marine reserve, 9 nature reserves, 3 natural monuments and 2 urban nature parks.

It monitors and controls illegal activities in the protected areas under its management.

Roma Natura must approve any initiatives liable to change the condition or appearance of these sites before work commences.

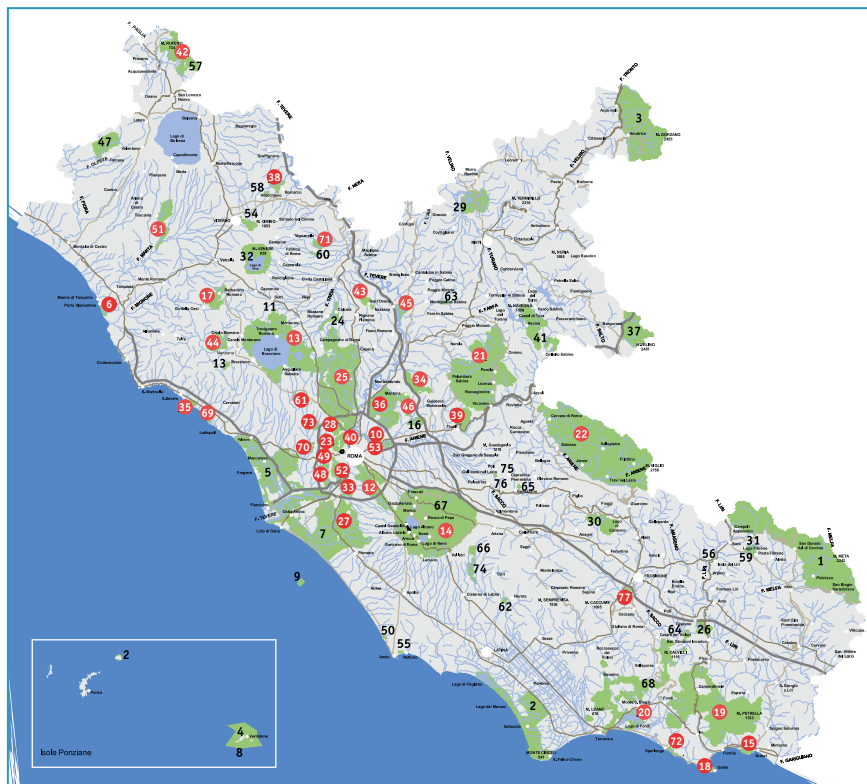
This legal framework, similar to the work permit system for listed sites in France, gives Roma Natura real power to control green and blue infrastructure.

## ■ At region-wide scale

The region of Lazio has numerous protected areas, including: 3 national parks, 15 regional nature parks (including the Appia Antica Regional Park), 4 State-owned nature reserves, 2 marine protected areas, 29 regional nature reserves and 21 natural monuments.

The conurbation of Rome stands at the crossroads of an almost unbroken system of protected areas. The regional model is similar to a “large wheel”, with green infrastructure forming the spokes that penetrate deep into the centre of the dense urban area.

*Illustration 5: The region of Lazio's protected areas, 2009 (source: [www.parchilazio.it](http://www.parchilazio.it))*





The municipality of Rome's natural and rural spaces form a chain of protected areas that cover 64% of the territory. As such, this is a genuine interconnected network of protected spaces that perfectly corresponds to the definition of green and blue infrastructure as stated in France's Grenelle 2 law.

**Rome's green and blue infrastructure includes:**

- natural spaces, farmland and forests recognised as areas of importance for biodiversity and identified at different territorial scales (municipality, province, region, state);
- ecological corridors comprising natural and semi-natural spaces, along with linear or

isolated plant formations that link and connect these spaces;

- waterways, rivers, streams and wetlands that maintain the aquatic continuities of the area's catchments.

Generally speaking, these protected areas are natural and rural spaces of the Agro Romano. The presence of the countryside in the city helps to establish a green and blue infrastructure with rich historical, archaeological and environmental elements.

## 2 Appia Antica regional park

### 2.1 The Appia Antica: a structurally important road

Construction work on the Appia Antica began in 312 BC, in an effort to connect Rome with the Adriatic coast. It was one of the first fully paved Roman roads.

Where it intersects with the Appia Antica, the GRA is buried underground for more than 1,000 metres in order to preserve the "road" continuities and ecological and landscape connections on the surface.

It was the starting point of a vast road network that secured the Roman Empire's dominance. Today, the Appia Antica is one of Rome's best preserved ancient roads.

### 2.2 Construction of the regional park

This suburban space was saved from the onslaught of urban sprawl by a determined and tenacious group of intellectuals, who spent decades fighting their cause and eventually secured the support of local residents and Romans as a whole.



*Illustration 6:  
The Appia Antica  
today*

Key dates	
1960	<b>The space is assigned minimal protection</b>
1965	<b>The government introduces plans to create a park</b>
1970	<b>Grassroots movements grow in force</b>
1979	<b>Efforts to create a municipal park step up a gear</b>
1980	<b>The municipality of Rome begins compulsory purchases of illegal homes</b>
1988	<b>The Appia Antica Regional Park is created</b> The region of Lazio passes a law establishing the Appia Antica Regional Park in the municipalities of Rome, Ciampino and Marino. The park is primarily a protected area designed to conserve and promote natural, artistic, historical, economic and educational resources (regional law no.66 of 10/11/1988).
1993	<b>Antonio Cederna is appointed president of the park</b> A management body is established and charged with overseeing the park's actions.
1997	<b>The legislative framework governing regional parks is strengthened</b> The regional law of 6 October 1997 on regional parks allows parks to establish their own executive boards.
2009	<b>The Appia Antica Regional Park's articles of association are formally adopted</b> The Appia Antica Regional Park's executive board formally adopted the new articles of association on 2 July 2009. Based on the provisions of the regional law of 6 October 1997, the document sets out the park's objectives and activities (charter).

## 2.3 The park today

The Appia Antica Regional Park covers 3,296 hectares to the south-east of the city of Rome. Starting at the Porta San Sebastiano, it stretches for more than 20 km in length along the Caffarella valley.

The route of the ancient Roman road (Via Appia Antica) forms the main backbone of the park. The Park also includes a number of Roman remains that draw in visitors, alongside new constructions (housing estates and isolated villas). Some 85% of the park's total surface area belongs to private owners.

The park's rustic landscape is typical of the Agro Romano. The nearby vast customer catchment area and the establishment of short distribution channels (farmers' market and the park's own label, "Naturel Campo") mean that farming activities

can be maintained. This, in turn, ensures that the landscapes of the Agro Romano are preserved. The land within the park is divided between around 20 farmers.

The combination of different natural and rural spaces is highly beneficial to plants and wildlife living in the park. The park has established land use contracts to encourage farmers to move towards environmentally friendly and ecologically valuable forms of agriculture. It negotiates agreements with farmers within the parks boundaries, setting down the terms governing crop-growing and farming techniques:

- late mowing of river banks;
- cleaning of ditches;
- moderate hedge pruning;
- conservation of deadwood for wood-eating insects and tree-dwelling bats.

The Appia Antica Regional Park is a major biological corridor between Rome's south-eastern suburbs and the Alban Hills.



Illustration 7: The Appia Antica Regional Park  
(source: [www.parcoappiaantica.it](http://www.parcoappiaantica.it))

## 2.4 Appropriation of the park

The Appia Antica Regional Park's hinterland has a population of more than 500,000 people and it is one of the most popular walking spots among Rome's residents. The park attracts a million visitors each year.

It is a multi-functional space, popular with people of all ages and interests:

- it includes a number of themed trails (waterways footpath, wildlife observation hides, health trails, mountain bike trails and hiking routes);
- it offers something for all interests (picturesque viewpoints, farm animals, playgrounds, traditional rural environment).

It is particularly popular on Sunday afternoons, when local families come here to walk and enjoy the surroundings.

### 3 Park governance

#### ■ The PRG: a planning tool

The Piano Regolatore Generale (PRG) is a master plan produced in accordance with law 1150/1942. It is in urban planning document that sets out precise land use rules.

The PRG is a planning tool used by Italian municipalities to set general guidance and strategy for urban planning and land use rights. It combines the prescriptive elements of a regional integrated development plan (SCoT) (defining protected areas and priority urbanisation zones) and the plot-specific rules of a local urban development plan (PLU). As in France, the PRG is enforceable on third parties.

**The 1965 PRG** included provisions to create protected green zones known as “cunei verdi” (green triangles).

These protected landscaped spaces are aligned with the Agro Romano, i.e. they are superimposed on the Roman landscape in an effort to protect the local characteristics and upkeep practices of these areas.

Each protected area includes a “finger” pointing inwards towards the city centre, in an effort to establish clearly defined contact zones between the city and the countryside.

**Between 1965 and 1980**, Rome’s population doubled and new housing, around half of it illegal, sprung up on 20,000 hectares of land. In the mid-1980s, the municipality began a process of legalising illegal homes and demolishing the most sensitive buildings (wrecking yards).

Efforts were also undertaken to bring utility networks up to standard and to reinforce buildings, in conjunction with local services.

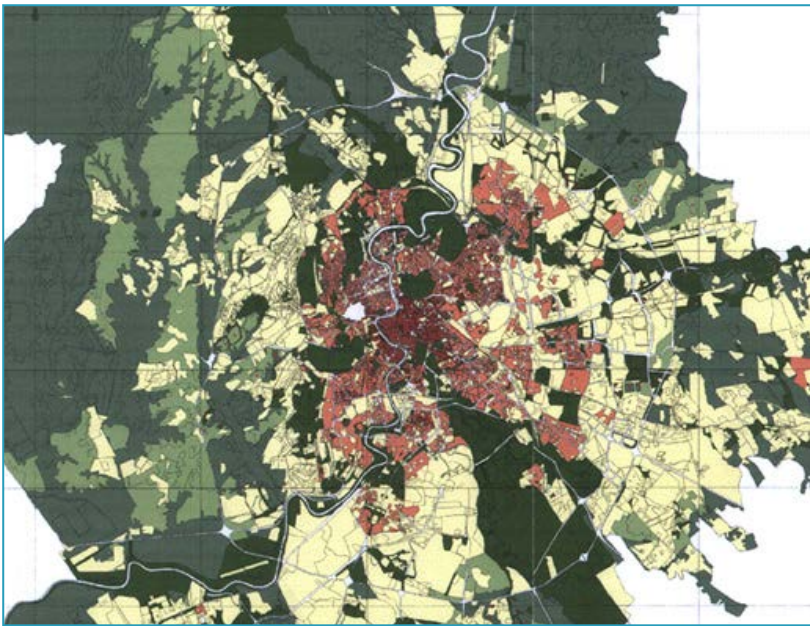
In response to high demand for housing, a vast low-rent home-building programme was carried out. The first land use protection decisions were also taken.

**In 1993**, in response to urban problems and the lack of a clear solution to the housing crisis, the Mayor of Rome Francesco Rutelli and the municipal council decided to draft an innovative urban planning document and to set new urban planning guidelines for the city.

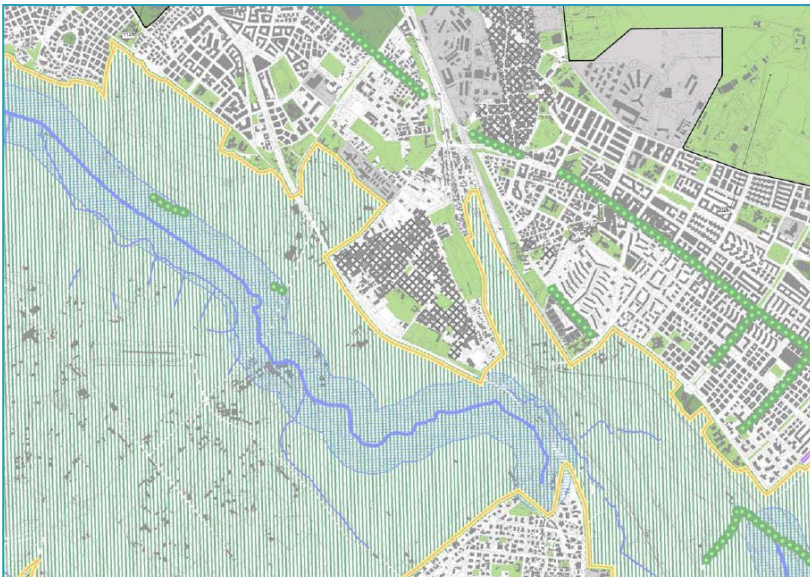


*Illustration 8:  
A multi-functional  
natural space  
in the city*





*Illustration 9: Excerpt of the Piano delle Certezze (1997), a wide-ranging strategy document that lays down the principles and values governing the preservation of natural and historic heritage (source: Rome City Council)*



*Illustration 10: Excerpt from a Rete Ecologica ecological corridor map, 2008 PRG (source: Rome City Council, [www.urbanistica.comune.roma.it](http://www.urbanistica.comune.roma.it))*

In 1995, the region of Lazio passed a law governing the establishment of regional nature parks.

In 1997, the city pre-empted the new PRG by adopting the Piano delle Certezze (certainty plan). This interim plan included provisions to implement environmental conservation measures.

It set out the principles (or “certainties”) underpinning the urban planning project:

- preservation of natural heritage;
- conservation and promotion of historical heritage.

Three key guidelines were adopted:

- identifying natural and rural spaces requiring protection and establishing an effective long-term management mechanism for protected areas to avoid inaction;

- developing public transport;
- renovating suburban neighbourhoods through public initiatives and private investment, based on public-private partnerships.

**The Piano delle Certezze** defines three main types of zone (see illustration 9):

- **A constituted city** (La città consolidata) in brown. The city is contained within its boundaries. The ban on building on open land in the historic city centre is reasserted in an aim to create green spaces connected to the architectural and archaeological heritage protection zones. The modernisation of rail transport moves to the top of the agenda.
- **A natural space and farmland preservation zone**, in green, protects the Agro Romano against development projects that are incom-

patible with the vocation of these spaces. The creation of parks and public gardens in these areas is encouraged. In total, 82,000 hectares of land is classified as greenbelt.

- **A city in transformation**, in yellow, which is not planned by the Piano delle Certezze.

**In 2006**, a new PRG including conurbation-wide environmental conservation objectives comes into force, replacing its predecessor from 1965.

**In 2008**, the PRG sets out the city's strategic decisions and objectives. The document includes ecological networks (Rete Ecologica) covering the entire conurbation of Rome. The document details all existing ecological networks and future networks for creation, particularly in already-urbanised areas. For each identified zone, the plan includes concrete restoration and enhancement actions (plantation, compulsory purchase, creation of green spaces, management method).

The entirety of the Appia Antica Regional Park is protected as greenbelt in the most recent PRG (2008).

The Appia Antica Regional Park features two distinct landscapes. To the north is the Veio Regional Park (1,500 hectares) and to the south is the Appia Antica Regional Park proper (3,400 hectares). These two parks are important barriers to urban sprawl.

It is still too early to assess the impact of the 2008 PRG. The park services have stated their disappointment that they were not involved in the studies to define the location of the ecological corridors inside the park. Had there been closer linkage between the park and ecological and landscape continuity preservation issues, this would undoubtedly have led to a more coherent green and blue infrastructure and would have provided an opportunity to consider the future of abandoned land and infill sites.

#### Planning documents in Rome

1965	<b>1965 Master Plan</b> Piano Regolatore Generale (PRG)
1997	<b>Certainty Plan</b> The Piano delle Certezze includes environmental conservation measures
2006	<b>2006 Master Plan (PRG)</b>
2008	<b>2008 Master Plan (PRG)</b> This includes ecological networks (Rete Ecologica)





## 4 Ten key points

- ➡ As a result of sustained planning efforts, the entirety of the Appia Antica Regional Park (3,296 hectares) is listed as greenbelt land in the 2008 PRG.
- ➡ The outskirts of the park and the connecting links between the Agro Romano and urban neighbourhoods are clear and transparent, with a marked contrast between dense urbanisation and open countryside. Some 64% of the territory of the municipality of Rome is subject to strict protection.
- ➡ Farmland and forests are managed extensively. Farmers sign agreements with the park to carry out upkeep, cleaning, mowing and pruning work. The park finances promising agricultural development projects (agritourism, pastoral farming support, conversion of plots to organic farming).
- ➡ The park's facilities and equipment (primarily leisure, nature exploration and public information) are fully integrated into the environment. All of these facilities are carefully designed, and many are located in requalified and renovated buildings (the park's head office is located inside a former factory building, for example).
- ➡ The park attracts a million visitors per year and is a multi-functional space popular with local residents and tourists alike, despite the fact that 85% of its surface area belongs to private owners.
- ➡ The park is rich in biodiversity. It boasts a wide range of natural environments (aquatic and woodland), along with small isolated and extensively managed agricultural plots. The park provides habitat, food and shelter to a large number of endemic animal and plant species.
- ➡ The ecological corridors are clearly defined in the 2008 PRG, and the areas of importance for biodiversity are governed by specific regulations. The Grande Raccordo Anulare (GRA), which passes by the southern edge of the park, is buried underground for 1 km to prevent disturbance to the ecological and landscape continuities on the surface.
- ➡ The park is managed by an independent public agency, with an investment and overheads budget (contributions from the region of Lazio, the province of Rome and Rome City Council). The park employs a team of wardens with the power to issue fines to offenders.
- ➡ The park is legally authorised to purchase land. The land purchase examination process is similar to the process employed by the coastal and lakeside protection agency in France.
- ➡ Finally, the park is firmly committed to sustainable development in all its activities. Its programmes and interventions are designed in consultation with local stakeholders (students, academics, local residents and Italian institutions).

## 5 Conclusion

The conurbation of Rome is home to dynamic farmland on the outskirts of the old city. The city's wealthy land owners and powerful religious communities have resisted the pressure of urban sprawl, meaning that the city's natural and rural spaces have been spared the ravages of clearing and regrouping.

Today, these vast estates are known locally as the Agro Romano, the countryside in the city, where extensive agriculture (mainly polyculture and livestock farming) has shaped the rural landscapes and provided sanctuary for specialist Mediterranean wildlife and plant species. The Azienda Castel di Guido (2,000 hectares), for example, once belonged to the Vatican. It was purchased by the municipality, which now manages organic farming on the site and protects the rich ecological and landscape qualities of the wetlands and wooded areas (300 hectares).

The Agro Romano is also home to an abundance of archaeological remains, historic monuments, picturesque sites and prestigious locations.

Each is intimately linked to the fate of the others, to the extent that countryside in the city is now an integral part of urban planning projects, notably through protected areas with different protected statuses and labels controlled by specific management bodies created for this purpose. Since the 1980s, the municipality has encouraged farmers to move towards environmentally friendly and ecologically valuable forms of urban agriculture.

Rome has made a runaway success of the connection points between city, nature and countryside. This clever mix of natural, architectural and historical riches makes the Italian capital one of Europe's leading tourist destinations. Rome's green and blue infrastructure protection and promotion policy is an example of genuine economic, social and environmental success.



*Illustration 11: Dirt tracks connecting the residential neighbourhood and the Regional Park*

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