

Urban Green Belt

Vitoria-Gasteiz, Spain



Vitoria-Gasteiz's recovering of green spaces from degraded areas

The Green Belt is a group of semi-natural periurban spaces partially recovered from degraded areas, such as gravel pits, burnt ground and drained wetlands from the fringe areas of Vitoria-Gasteiz [1]. Through the Green Belt project, the city has been making progress since the 1990s in land management to recover biodiversity by restoring many of its damaged ecological and landscape areas [2]. When full restoration of the parks will be completed, the Green Belt will form a continuous series of green spaces for cyclists and pedestrians, making it the natural lung of the city, linking the city with the countryside and creating a large green area for recreational use around the city [1].

Country/ City Profile

Country		City	
Population (2013)	46.40 million [3]	Population (2015)	242,223 [5]
Land area (km ²)	505,940 [3]	Land area (km ²)	276.8 (urban area) [1]
GDP per capita (2014, current international \$, at purchasing power parity)	33,763 [16]	GDP per capita (2010, US\$, at purchasing power parity)	39,173 [6]
Region	Europe	Region	Basque Country/ Inland
Location	<ul style="list-style-type: none"> ✓ In the north of Spain, in the Autonomous Community of the Basque Country ✓ The city has developed in an environment surrounded by a large area of agricultural land and natural vegetation, enclosed by forests, the Zadorra river to the North and the Vitoria Mountains to the South = exposure to flooding 		
Climate	<ul style="list-style-type: none"> ✓ Situated in a transition zone between the Atlantic and Mediterranean climates = intense climate variations [7] ✓ 2°C average temperature during winter and 24°C during summers [4] ✓ 28 sunny days per year and a mean of 1,830 hours of sunlight per year 		

City's physical geography

Initiating context

In the 1980s there were a series of mostly abandoned and highly degraded seminatural areas on the periphery of Vitoria-Gasteiz. Heavy industrialization in the 1960s had a great impact on these peri-urban areas, reducing their ecological value and increasing the size of marginal spaces due to the expected changes in land uses, from agricultural to industrial uses [8]. The ecological downfall of the interface between the city and the country-side was not solved and many symptoms of environmental degradation were emerging: garbage dumps, abandoned gravel pits, burnt forests and shrub areas, illegal vegetable gardens on the riverbanks, slums, illegal fishing and hunting, cattle breeding etc. [9].

The peripheral areas were under heavy pressure from urban developers. The uncontrolled landfills were coexisting with industry areas and new infrastructures, brownfield sites, villages, vacant and residual spaces, high-quality landscapes etc. [8].

Project description

The alarming degradation of the peripheral areas has led to the idea of creating a green belt around the city of Vitoria-Gasteiz in the 1980s [9]. The project is constituted of a set of peri-urban parks connected by ecological corridors, which serve as linking instruments [8]. The main legal precedent for this action was the approval of the General Urban Development Plan (Plan General de Ordenación Urbana) in 1986. The plan suggested the restoration

of 300 ha of land around the city and integrating them into already-existing green areas. As of 2013, the perimeter of the green ring measured 35 km and it is projected to reach a surface area of 993 ha in the future stages [9].

Implementation process

The initial restoration works that focused on the peri-urban areas were influenced by several factors: high levels of degradation, high natural values, budget, educational and illustrative value of the land, social and institutional support, suitability for public use [8].

In the first stage of the project in the 1990s, the combination of environmental ecological, economic and social factors has led to the creation of new peri-urban parks. The developments also included the restoration of gravel pits, improvement of public paths and sowing and planting the plowed areas.

Projects implementation details

Objectives	The environmental and social restoration and conservation of the peri-urban areas of the city [2].	Involved Partners [2, 15]: <ul style="list-style-type: none"> ✓ Centro de Estudios Ambientales (CEA) ✓ Vitoria-Gasteiz City Hall ✓ The National Employment Institute (INEM) ✓ The Basque Government ✓ The European Association of Periurban Parks (FEDENATUR) ✓ The EU ✓ Ministerio de Agricultura, Alimentación y Medio Ambiente ✓ Savings Banks of Vitoria and Álava
Strategy	The creation of a natural continuum around the city, integrating the peri-urban parks with the urban outline and connecting them with the natural environment [9].	
Financing	The Green Belt is a collection of projects, each with its own financing arrangements. Between 1993 and 2011, the total general investment was €34 mil., out of which €12 mil. represent the costs for the acquisition of land and €22.1 mil. define the restoration, construction and equipment. The city's government covers up most of the costs, while financial compensations cumulate to €15 mil. (43% coming from EU structural funds, 26% from the Spanish Government and 31% from the Basque Government) [15].	

Main phases of the Green Belt development [8, 9]:

- ✓ Regulating the hydrological system
- ✓ Creating connections
- ✓ Improving accessibility
- ✓ Integrating public use in natural surroundings
- ✓ Promoting pedestrian and bicycle mobility
- ✓ Reassessing agricultural activities
- ✓ Preserving rural landscapes
- ✓ Increasing biodiversity and biocapacity
- ✓ Conditioning urban planning and design

Guiding principles: Landscape ecology; Social integration; Balanced land use distribution; Awareness of environmental issues; Protection of the rural landscape

Green Belt - Details of interest [2, 14]:

- ✓ Created in 1993
- ✓ Current area: 727 ha
- ✓ Total area planned: 993 ha
- ✓ 79km of foot and bike paths
- ✓ Salburua Park was declared Wetland of International Importance by the Ramsar Convention in 2002
- ✓ Salburua and the Zadorra River were declared Places of Community Interest and included in the Network Natura 2000 in 2004
- ✓ Total length: the route around the Green Belt is a 30.8 km circular course
- ✓ The route is of medium-low difficulty, suitable for families and for sports-acustomed people
- ✓ Modes: walking, cycling and jogging. Suitable for pushchairs

Type of path: surfaced paths, pedestrian areas and road

Projects composition

Current consolidated parks (as of 2011) [2]:

- ✓ Armentia (165 ha)
- ✓ Olarizu (93 ha)
- ✓ Salburua (218 ha)
- ✓ Zabalgana (61 ha)
- ✓ Zadorra (155 ha)
- ✓ Errekaleor (12 ha)

Noteworthy actions undertaken [9, 19]:

- ✓ Restoration of the Salburua wetlands, the richest area of the Green Belt in terms of biodiversity. More than 60 ha of flooded land were recovered and more than 300 breeding pairs of aquatic birds, 2,000 specimen of wintering species and animal species were reintroduced.
- ✓ Recovering the areas of alluviums and the reforestation of the banks of the Zadorra River, to offset the problems created by river floodings
- ✓ Involvement of citizens in the project and on the implementation of environmental education activities.
- ✓ Strengthening of research activities through the publishing of leaflets and scientific publications.
- ✓ The parks were designed with eco-efficiency and maintenance economy, adopting infrastructure and facilities that need easy upkeep.



Map of Vitoria-Gasteiz with the consolidated parks ©CEA 2014, Source: [10]

Results

The development of the Green Belt has been the starting point of advancement phases of a green infrastructure that would include the regional and the urban level sphere. Future projects include a concentric Inner Green Belt in the heart of the city, connected through radial axes (ecological corridors) to the peri-urban Green Belt and to the Agricultural Belt (located around the city). The creation of different parks and walks in the peri-urban Green Belt has increased demand for better accessibility from the city. An Urban Pathways Plan was created in 2003, which guaranteed the implementation of the required connections. An entire network was designed through radial urban axes for pedestrian and cyclist mobility. Each of these pathways also connects main urban areas such as civic centers, plazas, schools and sports facilities [8].

The urban pathways have also been complemented by a free bicycle-lending service (the first in Spain) in 2004, which has led to an increase of bicycle users [8]. In 2011, cycling measured 6.9% of the total share of sustainable transport modes, public transportation was at 8.3%, while walking represented 53.6% [12]. Private vehicle usage declined by 29.3% since 2006, measuring 28.3% of the total transport modes in Vitoria-Gasteiz in 2011 [13]. Vitoria-Gasteiz and its peri-urban environment has a variety of green spaces which, when linked and interrelated, could form a proper urban green infrastructure [9].

Green Infrastructure benefits [11]

Adapting to Climate Change	<ul style="list-style-type: none"> ✓ Flood prevention ✓ Floodwater regulation ✓ Improving ecological permeability (refuge of species in case of extreme weather conditions) ✓ Increasing aquifer recharge water 	Mitigating Climate Change	<ul style="list-style-type: none"> ✓ Reducing carbon emissions by increasing sustainable mobility (pathways, bicycle lanes, etc.) ✓ Reducing energy consumption (climatic heating by means of urban forests) ✓ Increasing carbon sequestration (sink effects)
Improving biodiversity	<ul style="list-style-type: none"> ✓ Increasing biocapacity ✓ Protection, maintenance and enhancement of natural habitats, biodiversity and wildlife 	Improving health and well-being	<ul style="list-style-type: none"> ✓ Generating community resources (citizen involvement) ✓ Increasing resources for sport and leisure ✓ Urban agriculture and locally produced food ✓ Improving aesthetic values ✓ Generating resources for training and education
Improving environmental quality	<ul style="list-style-type: none"> ✓ Controlling soil erosion ✓ Improving and maintaining agricultural land values ✓ Improving air quality ✓ Improving water quality 		

Lessons learned

Green Belts can be used to make places greener, healthier and more liveable and for promoting responsible citizenship in relation to environmental questions. At its incipient stages, the Green Belt of Vitoria-Gasteiz was seen as an overall solution to the problem of degraded areas between the city and the countryside. But it was later realized that the benefits of this restoration went beyond the social and ecological improvement. It had been a multifunctional strategy aimed at introducing landscape ecology concepts into city planning decision-taking [8, 9].

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