Climate change and spatial planning in the Basque Country: The revision of the guidelines for the spatial planning (DOT)

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Surface: 7,234.8 km²
21% surface: Natural spaces
Population: 2,171,866 inhabitants
Coastal population: 1,400,000 inhabitants
Cities: Bilbao, San Sebastián, Vitoria-Gasteiz

Coastal territory, small, awkward relief.
Metropolitanized with a high-density city model.
Planning scales. Multilevel approach

Basque Country has exclusive competences in spatial planning
4/1990 Law, Spatial planning in the Basque Country

Regional scale
Guidelines for the Spatial Planning of the Basque Country
(28/1997 Decree)

Partial Territorial Plans

15 “functional areas”

Sectorial Territorial Plans
(about: environment, infrastructures, soil policies)

Municipal Urban Planning
GUIDELINES FOR THE TERRITORIAL PLANNING 1997:
Response to climate change from regional scale

PHYSICAL ENVIRONMENT:
- Soil categorizing
  - (forest, agricultural land, protection of wetlands, etc.)
- Identifying risks
  - (floodplains, slippings, etc.)

URBAN HIERARCHY:
(territorial and industrial quantifying)

RELATIONAL SYSTEM:
- Adapting uses to network
- Sustainable mobility
PARTIAL TERRITORIAL PLANS: 15 Functional areas
Intermediate scale: setting criteria at a comarcal scale
Sectorial Territorial Plan for the Protection of the Coast (43/2007 Decree)

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Coast in the Basque Country:
- Sea
- **Effects of the tides. Estuaries**

Sectorial Territorial Plan criteria
- Zoning
- **Protection of the coast**
Sectorial Territorial Plan for the Protection of Rivers and Streams:

- Cantabric watershed 415/1998 Decree
- Mediterranean watershed 475/1999 Decree

Floodplains: Adapting to the European 2007/60/CE Water Framework Directive:

- 449/2013 Decree

- Integration of the three components: urban, environmental and hydraulic
- Taking care of riverbanks
- Stream coverages elimination
The revision of the Guidelines for the Spatial Planning of 1997

BASIS:
- A sustainable, inclusive, living, smart, well balanced, interrelated and participatory territory.

DEFINING ELEMENTS OF THE TERRITORIAL MODEL:
- Green infrastructure, countryside land, urban regeneration, urban growth perimeter, sustainable mobility, water, energy, circular economy.

CROSSING ISSUES:
- Universal accessibility, gender point of view, climate change, health, euskera (basque language), interrelated territories.
Socioeconomic context

Climate Change

Sea level rise (end of 21st century) | Precipitations Decresse | Temperatures incresse
---|---|---
29-49cm | 10-30% Mediterranean watershed 10% Cantabric watershed | Winter 1,5º - 2,5º Summer 4,5º - 7º
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Green infrastructure

**COMPONENTS:** protected spaces + ecological corridors + blue network

**CRITERIA:** protection tools unification, territorial fragmentation mitigation, prevalence over grey infrastructure.

**NATURE-BASED SOLUTIONS:** ECOSYSTEM SERVICES
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**URBAN SYSTEM:** Capitals polynuclear system + functional areas heads + transformation axis ("Ejes de Transformación")
**URBAN HABITAT**: urban growth perimeter. Limit soil artificialization

**Urban regeneration and redensification**

- Basque country as a finite territory
- Priority to densification and urban regeneration
- Perimeters which limit urban sprawl
- Critical factors that have an impact on environments quality and on natural resources management.
Sustainable mobility and logistics

Resources sustainable management

**WATER:**
Sectorial Territorial Plan for the Protection of Rivers and Streams in the Basque Country is an example of administrative agreement and of integration of environmental, hydraulic and urban variables.

**ENERGY:**
Energetic efficiency and renewable energies are essential requirements for territorial sustainability and for fighting against climate change.

**CIRCULAR ECONOMY:**
The transition towards a circular economy based model:

A. Waste management
B. Soil as resource
CROSSING ISSUES: Climate Change

“We are the first generation to feel the effect of climate change and the last generation who can do something about it.”
2015. Barack Obama, President of USA

2015 “Basque Country strategy against climate change 2050. KLIMA 2050“.

Aims:

1. **Reduce greenhouse effect gas** emissions in at least **40% in 2030 and 80% in 2050** compared to 2005, reaching in 2050 a consumption of **renewal energy of 40%** of final consumption.

2. Ensuring **resilience of basque territory** to climate change; this objective as a result, must be reflected in this revision of the territorial model.
Article 31.- Guidelines to reduce and adapt to climate change

1. Consider **climate change in spatial planning and urban planning**.

2. Make **theme maps** of impacts and vulnerability.

3. Promote **green infrastructure** and nature-based solutions as a way to adapt to climate change.

4. Improve **forest management and reforest** deteriorated lands.

5. **Limit soil occupation**, favor mix-use and urban regeneration, boost that **means of transport with less emissions**.

6. Strengthen **urban areas, energetic efficiency** criteria in buildings and transports, and **renewal energies**.
A) Revision of the 2007 Sectorial Territorial Plan for the Protection of the Coast

Identify in the coastal areas the ways to adapt to the adverse effects of the sea level elevation and of the maximum train of waves
B) Sectorial Territorial Plan for the Protection of Rivers and Streams

Give the appropriate treatment to the floodplains, with special attention to the areas where flood determinants and coastal conditions superimpose.
C) Urban planning: Green infrastructure. **Vitoria-Gasteiz**

*Green infrastructure and ecosystem services* (multilevel approach, multiconceptual and continue).
C) Urban planning and climate change. **Bilbao**

Zorrotzaurre (Zaha Hadid). **Urban regeneration, floodplain and coast**

Transform the peninsula into an island to avoid floods; a 75 meter water channel changed into a river, buildings in an elevated platform.
C) Urban planning and climate change. Donostia/San Sebastián

Sensibility for the chain of heat waves impact in human health

Extrem waves area. Return 50 years. Sea level rises (4cm and RCP 8.5 end 21st century.)
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Territorial model development:
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MILA ESKER
MUCHAS GRACIAS
THANK YOU!