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Climate Change: the challenge and the opportunity

La apuesta del País Vasco por luchar contra el cambio climático

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Basque Country



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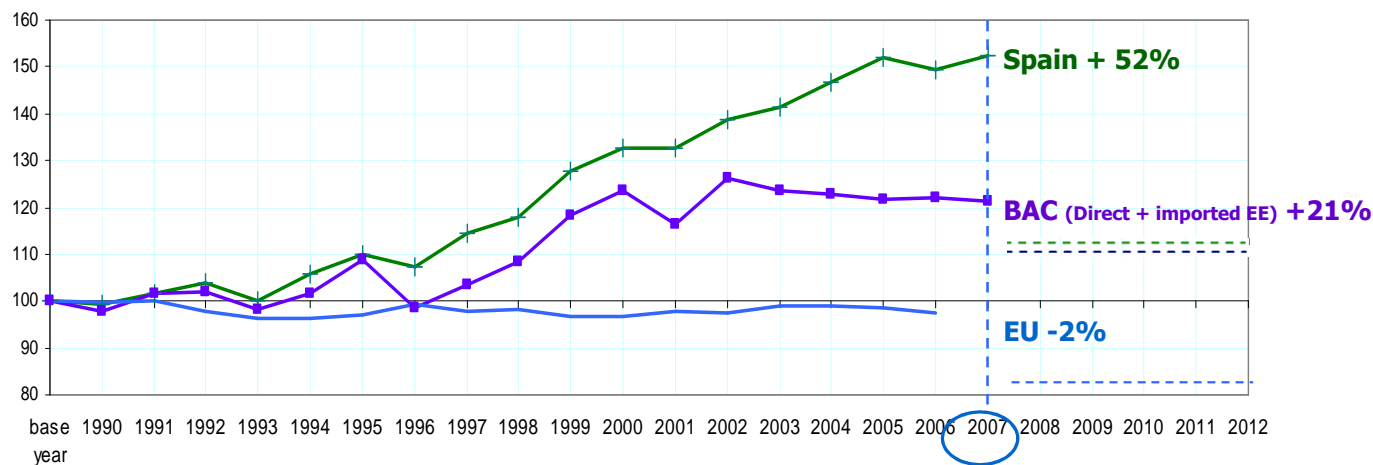
Context of the Basque Country (2007)

- **Population:** 2.141.860 people
- **Area:** 7,234 km²
- **GDP:** 57.549 65.928 million €
- **Per capita GDP:** 30,781 €/person (st)- (125.6 EU25)
- **GHG emissions:** 1990: 20.9 million tons CO₂e
 - 2007: 25.3 million tons CO₂e
- **Percentages per economic sector:**
 - Agriculture: 1%
 - Industry: 29%
 - Construction and Buildings: 9%
 - Services: 61%
- **Total electricity production:** 12,597 GWh
 - Percentage of renewable energy: 5.1% of power/4.5% of electric power



Progress of the GHG emissions

Progress of the GHG emissions (base year=100)



KYOTO OBJECTIVES 2008-2012
 - - - - - Spain +15%
 - - - - - BAC +14%
 - - - - - EU -8%

Climatic map of Basque Country



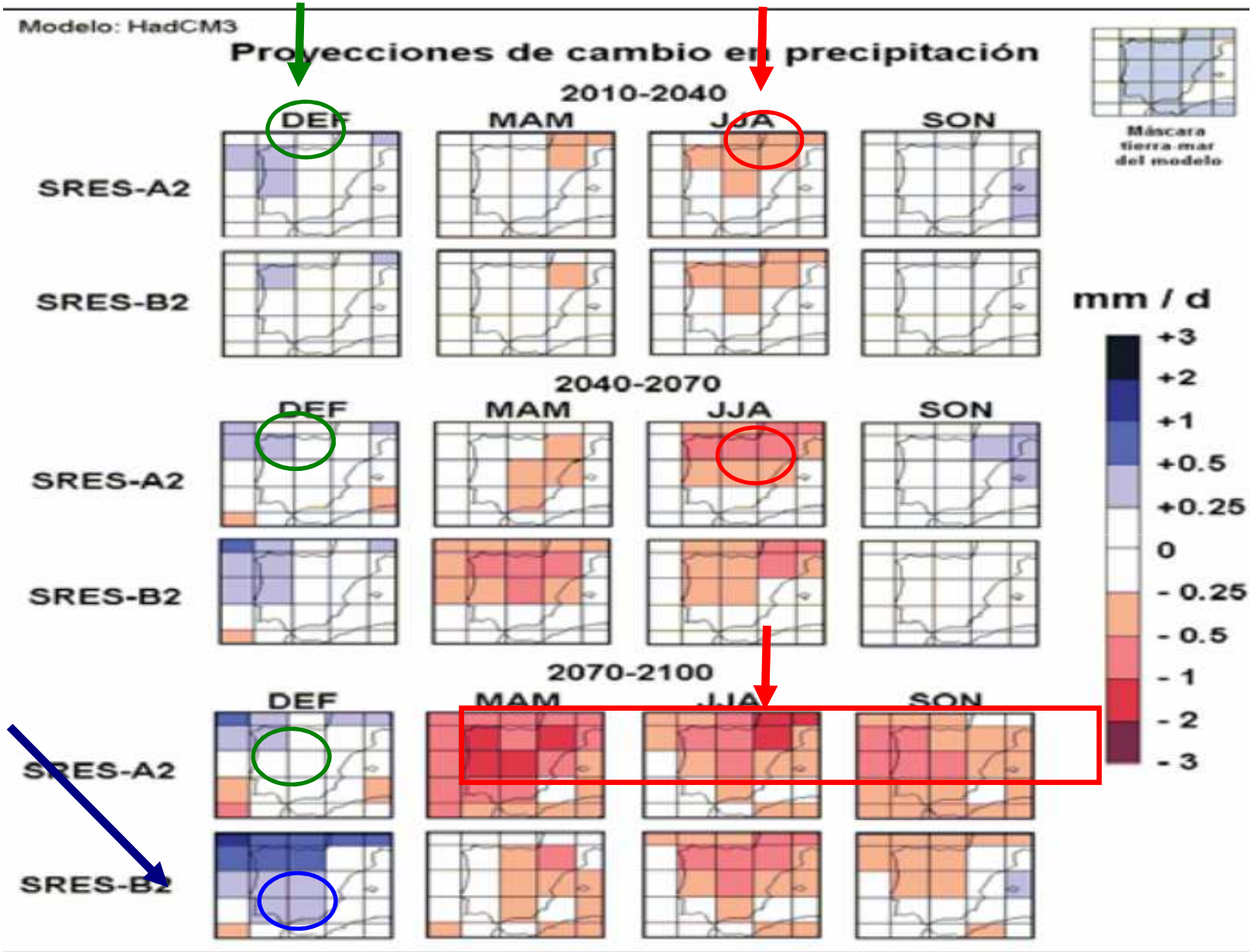
Atlantic : Moderate T^a (mild winters and summers), rainy , influenced by sea

Transition area: Influenced by oceanic and mediterranean climate.

South: Dry and hot summers and cold winters. (< 50 mm/month)

Expected Impacts of Climate Change

- Rainfall: extreme episodes
 - High uncertainty (differences in models).
 - Probable maintenance of absolute values...
 - ... but probable increase in seasonal variability and extreme episodes.
- Higher T^a
- Sea Level increase
- Increase in swell energy and changes in direction
- Increase in evapotranspiration
- Hydric stress
- In general increase in forest fires, floodings and erosion.



Fight against Climate Change in the Basque Country



Members

- Dpt. of Environment
- Dpt. of Industry
- Dpt. of Education
- Dpt. of Agriculture
- Dpt. of Housing
- Dpt. of Transport

**BASQUE ENVIRONMENTAL
STRATEGY FOR SUSTAINABLE
DEVELOPMENT 2002-2020 -
Environmental Framework
Programme 2007-2010**

**Approved by Government in dic 2007
Approved by Parliament in may 2008**

**ENERGY STRATEGY OF THE
BASQUE COUNTRY FOR 3E-2010**

Basque Plan Against Climate Change

Priorities

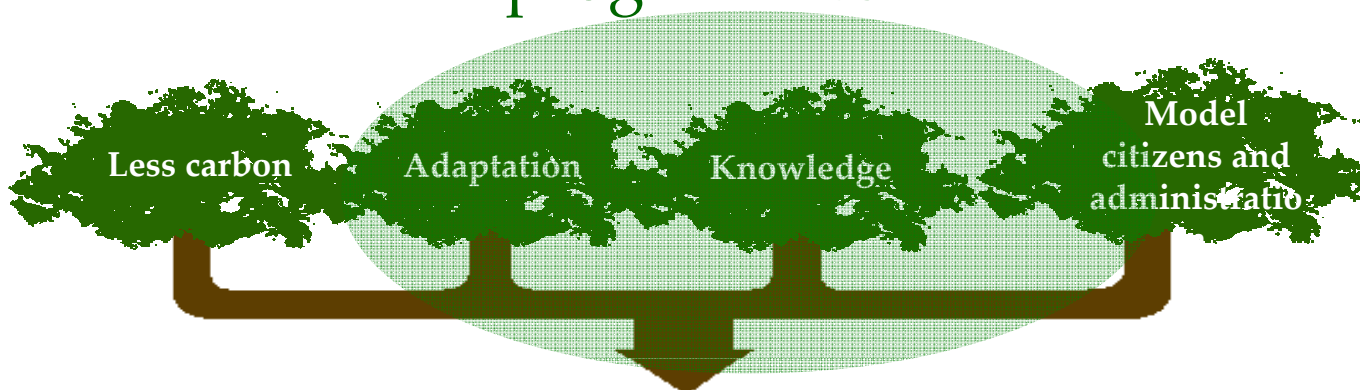
- To act against Climate Change and to prepare ourselves for its consequences
- To promote a culture of **innovation** that will allow to progress towards a prosper and sustainable economy **low in carbon**

Objectives

- To limit GHG emissions to **+14%** with regard to the base year
- To increase the removal aptitude of carbon **sinks** (forests) up to **1%** with respect to the emissions of the base year
- To minimize the risks on natural resources
- To minimize the risks on human health, the quality of urban habitats and socio-economic systems

Basque Plan Against Climate Change

4 programmes



120 actions

€79.5 million budget

Total economical effort = 630,6 million €



Programmes and actions

P-1 Mitigation	P-2 Adaptation	P-3 Knowledge (R+D+I)	P-4: Model citizens and administration
To develop wind potential	lines of work in ecosystems , vulnerability and impact:	Basque Excellence Research Center (BERC)	Basque Registry of emissions
Land Planning Guidelines: Concentrated urbanization and mobility reduction	Reports in municipalities vulnerable to floodings	Gaitek/Innotek projects (innovation in products and services)	International collaboration (Greenbelt movement, Benchmarking)
To create infrastructures for collective transportation	To adapt sanitary services and infrastructures	CIC energigune (research in renewable energies)	Public buildings and industrial areas Local and regional mobility plans
To establish the housing certification	To finance projects in adaptation and meteorology/climatology	Research of habitats and ecosystems	Education (GLOBE programme), spreading and awareness rising



Actions for adaptation

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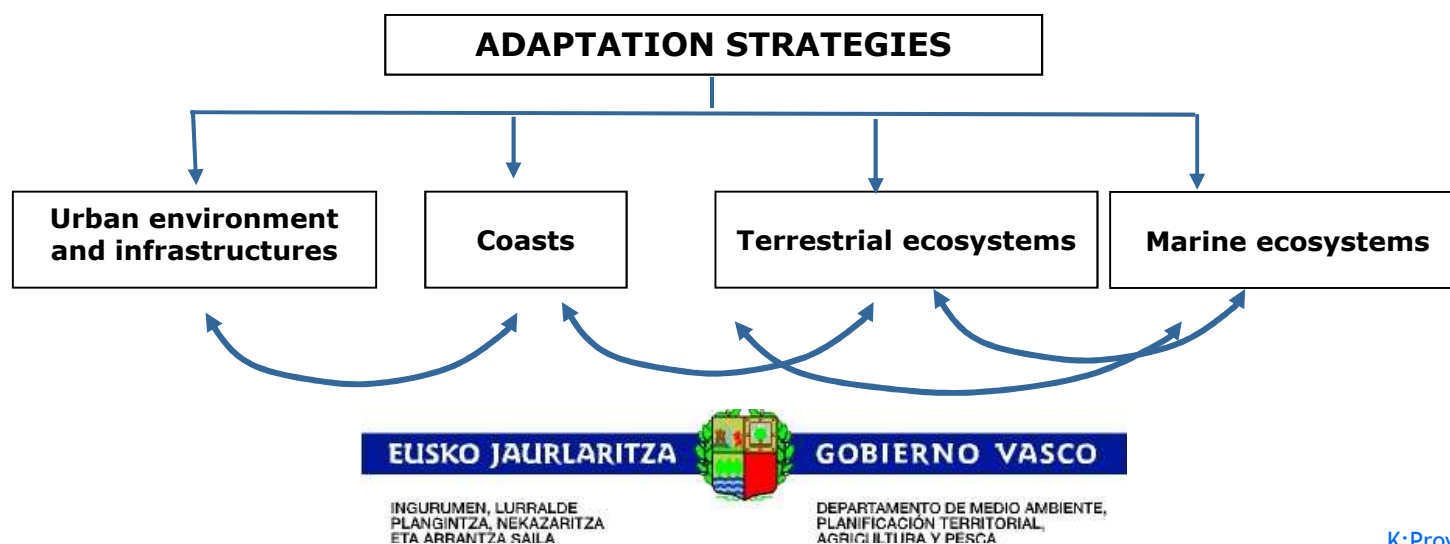
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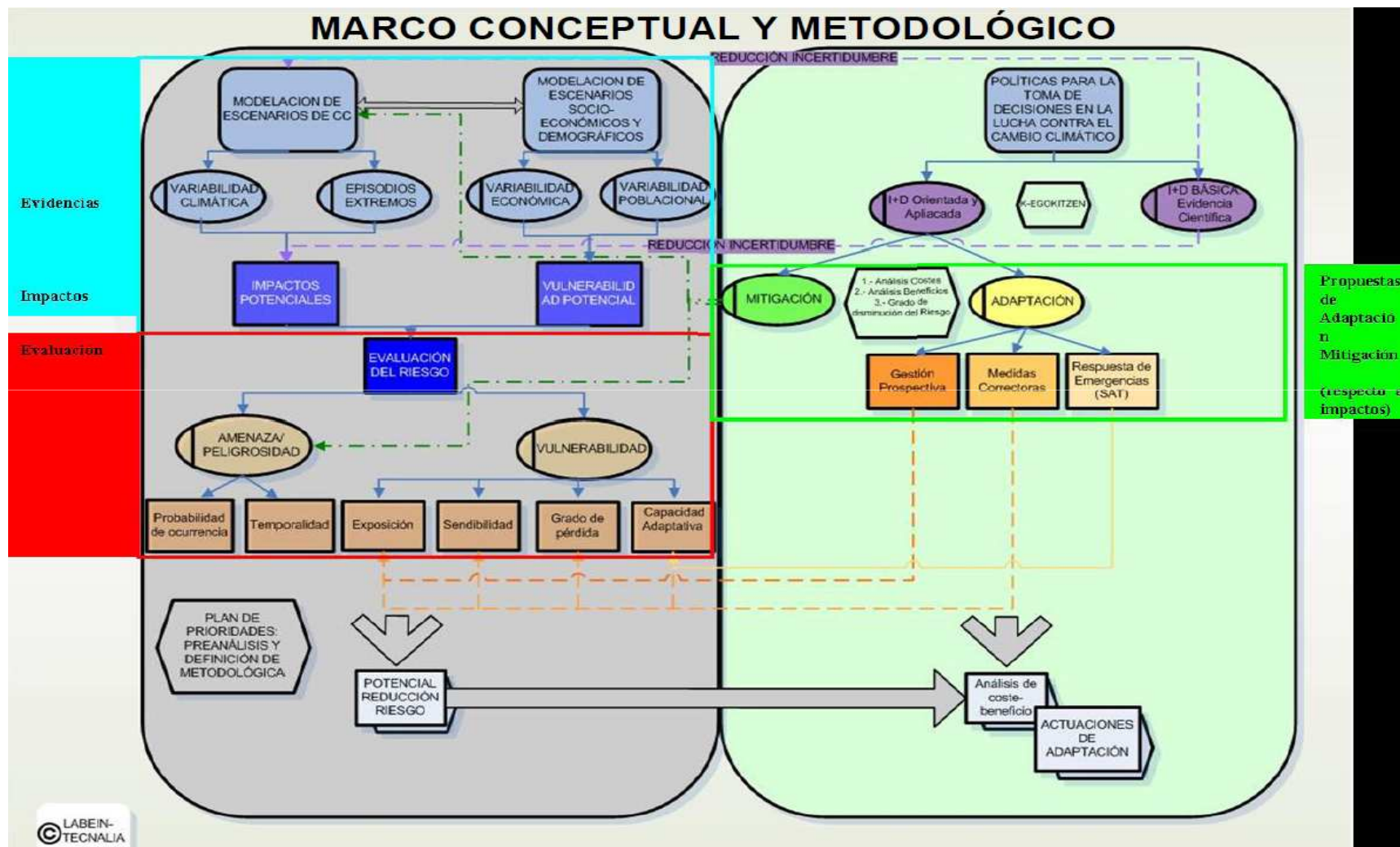
K-Egokitzen project

- **Main objective**
 - Design of **adaptation** strategies of human and natural systems in response to the possible **scenarios** resulting from the CC in the Basque Country, to the real or expected scenarios or to their effects, so the damage is reduced and we make the most of the opportunities.
- **Time-scale: until 2010 (1^o phase) 2013 (2^a)**
- **Thematic areas**
 - UEI - Urban Environment and Infrastructures
 - MC - Coasts
 - TE - Terrestrial Ecosystems
 - ME - Marine Ecosystems
- **Participation**
 - 14 research groups technological centres / university





K-Egokitzen project



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P3 Knowledge: example of performance of the BERC

- **Basque Centre on Climate Change (BC3)**
 - BC3 Research Centre based in the Basque Country which seeks to contribute to long term research into the causes and consequences of climate change in order to foster the creation of knowledge in this multidisciplinary field
 - The BC3 will study the consequences of the environmental crisis and the possible formulas to alleviate its effects, as well as the planning of measures for social and economic adaptation to Climate Change.

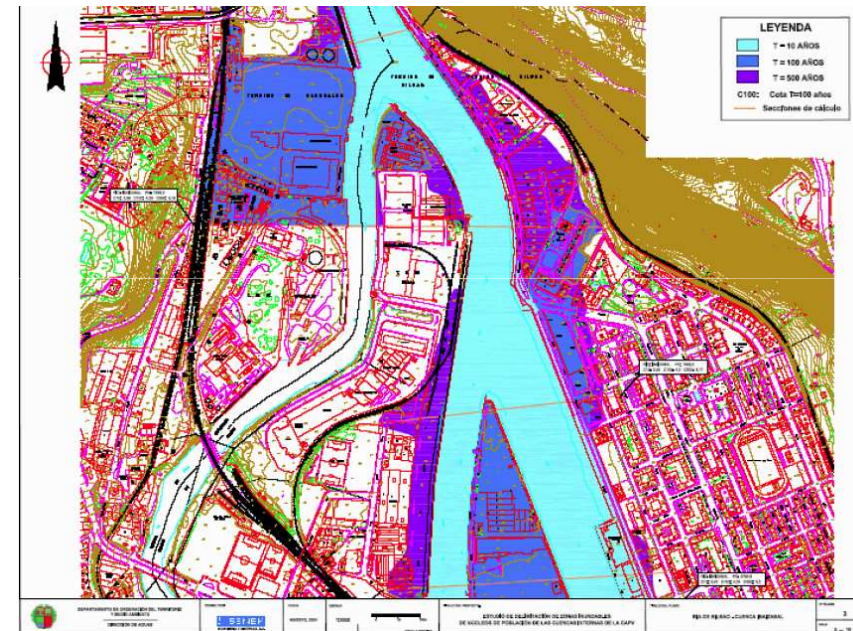




Research in costs of impacts

Two specific researches have been developed:

- Research of the costs of climate change: **floodings in Bilbao**
- Environmental risks and Climate Change: Floodings in the basin of the **Urola river**



Climate Change Multimedia

<http://www.eitb.com/infography-multimedia/climate-change.html>



- The "Special Multimedia on Climate Change" production, developed by the Ministry of Environment and Land Use Planning and eitb.com, **has been awarded with one of the 5 gold prizes in Malofiej contest**,
 - has been awarded also **with the first prize in the fifth edition of the ÑH 2008 contest and The Best of the Journalistic Design, organised by the Society for News Design (SNDE),**
- The objective of the tool is to **inform and to rise awareness of citizens** in the field of Climate Change
- It combines **computer graphics, videos, audios**, original documents, interactive virtual tours and a calculator in order to measure the environmental impact of our habits.
- Developed in **Basque, Spanish, English and French**

Working with municipalities: Udalsarea 21

- Working group on Municipality and Climate:
 - 80/250
- Started last year
 - Municipal Climate Change regulation started last year.
 - Aids for 4-5 innovative mitigation and adaptation projects per year
 - Training for technicians
- Started last year
 - Developing a practical guide for municipalities to define their adaptation plans. Application in two municipalities
 - Specific project to include CC (adaptation and mitigation) in urban planning. Practical guide and application in two municipalities





Future Challenges in Adaptación

- To establish a collaborative network among policy makers and research teams in Basque Country to improve the identification of investigation needs, financing aspects and use of the findings for policy.
- Also among policy makers at different levels in the administration to coordinate efforts.
- Improve the implementation of early action specially in territorial planning and specially in municipalities.
- To be connected with other regions, Spanish government and Europe to share and improve own actions





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