

Recovery of a natural coastal space along the Tonpoi cliffs in Bermeo following climate criteria

The natural area of Tonpoi is an area of high natural and scenic value as it is located next to the Talape and Tonpoi cliffs, in the vicinity of the San Juan de Gaztelugatxe protected biotope and within the Urdaibai Biosphere Reserve.

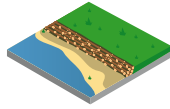
Before its recovery, the area was degraded and there was no public access. It was occupied by vegetable gardens and irregular temporary settlements such as shacks, temporary enclosures, fences, invasive vegetation, and even small uncontrolled waste dumps. Given its proximity to the sea and the steepness of the terrain, the area is vulnerable to landslides due to the combined effect of heavy rainfall and extreme wave events, which are becoming more and more frequent, putting users of the plots at risk.

The aim of the intervention was to create a public park through the environmental and social recovery of a degraded coastal environment by applying climate change adaptation criteria. To achieve this, peri-urban green infrastructure was created that occupies an area of 1.4 hectares close to the town centre, providing shaded areas and connecting Aritzatxu beach with the town centre through the Tonpoi cliffs.



General view of the park after the intervention was completed.

Type of NBS implemented in the intervention



Renaturalisation / stabilisation of cliffs

PHASE 1

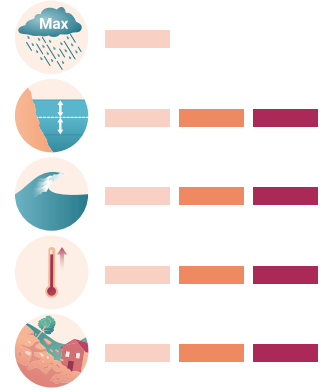
Acquisition of plots of land and site preparation

The first phase consisted of land expropriation, demolition of illegal constructions, and site preparation.



Preparation of land and execution of the work.

CLIMATE THREATS



CO-BENEFITS

Environmental



Social



Economic



SDG



PHASE 2 Vegetation planting

Planting of native tree and shrub species, provision of **3 km of footpath** that connects the urban centre with the natural coastal environment, and creation of an area to relax and enjoy the views. A total of **77 trees (0.5 trees per 100 m²)**, mainly holm oaks, have been planted to restore the original Cantabrian holm oak ecosystem of the area: 58 holm oak trees, 6 cork oak trees, 6 Pyrenean oak trees, 3 laurels, 2 pear trees, and 2 medlars. Around **1,500 shrubs (11 specimens per 100 m²)** have also been planted, of different species such as arbutus, blackthorn, buckthorn, privet, dogwood, alder buckthorn, bitter dock and common spindle. In addition, the existing fruit trees and native trees have been respected.



Final state of the area after the vegetation has been planted.

“ With this intervention, beyond environmental recovery, we have created a pedestrian itinerary where the people of Bermeo can exercise in a natural environment that is adapted to climate change and close to the town centre, but away from noise and pollution. ”

Municipal technician of Bermeo Town Council.



Agents involved

- Bermeo Town Hall
- Basque Country Coastal Authority
- Neiker, Basque Institute for Agricultural Research and Development
- Citizens: owners and users of the Tonpoi plots.



Economic data

Approximate cost of the intervention: € 360,000

Funding:

- **€ 50,000** (aid programme for local entities that carry out actions that promote sustainable development, 2018).
- **€ 290,000** (LIFE Programme, LIFE IP URBAN KLIMA 2050 project)



Barriers encountered

- Acquisition of the land by Bermeo Town Council. The area was divided into multiple privately owned plots, many of which were unregistered. Identifying and contacting land owners was costly, lengthening the project's procedures and timeframe. In addition, after the owners and users of the plots were made public to provide information on the de-registration process to pass the land to the municipality, several allegations were received and had to be processed before the plot expropriation and eviction process could continue.
- Presence of numerous small uncontrolled landfills in the area.



Success factors

Recovery of the original ecosystem with minimal actions and respecting the landscape.

Reuse of natural materials present on site or use of **locally sourced materials**.

Creation of several microhabitat areas (dead wood, pond, etc.) to enhance biodiversity.

Measurements (pre and post action) of soil organic carbon to analyse how the intervention improves soil quality and contributes to improving soil structure, reducing erosion, and making it more resilient to climate change.

Street furniture and street lighting is not used to restore the original natural state of the Tonpoi area.