



## Measure Evaluation Results

### ELB 3.1 Increase safety of pedestrian crossing in Elba

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|---------------------------|--|
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## Executive Summary

Both cities of Portoferraio and Rio date back to the 16th century and have maintained a network of narrow and historic roads in the inner cities that are not adequate for current car traffic. The two towns are the ports of arrival from the continent. During the summer, a remarkable number of cars (about 180,000 / month) and trucks (about 10,000 / month) arrive into these two ports and cross the cities to reach other places on the island. If the flow of local cars of the two cities (Portoferraio about 8,000 and Rio about 1,500) is added to the summer flow, the danger to pedestrians from poorly marked or dimly lit crossings is evident.

Given the large flow of motorised vehicles crossing the two cities, the realisation of safe pedestrian crossings is of considerable importance for the safety of citizens.

Numerous interventions have been made in this sense both in Portoferraio and Rio. The surveys carried out during 2020 confirmed the positive reactions of citizens and tourists towards these types of interventions.

For the evaluation of these measures, the indicators related to the number of accidents or near accidents (events that could lead to a serious accident) over the years should have taken into account the statistical data survey methodology, while the data coming from interviews with residents, tourists, and municipal police would have focused more on the effectiveness and perception of the realised measures. However, given the small size of the two municipalities, the data available on accidents concerns only serious road accidents but not near accidents. Given the lack of data, only the interviews were taken into account for the evaluation of this measure.

# A Description

Portoferraio and Rio are the only two ports on the island for disembarking cars and trucks. In the summer period, when the ferries arrive, considerable traffic flows are created in the two small towns, often resulting in dangerous situations for pedestrian crossings.

Several problems are generated by the flows of cars arriving and leaving the port of Portoferraio such as: an increase of traffic congestion along the port areas and in the city streets with the consequent increase of potentially dangerous situations for pedestrians.

To aggravate the situation in Rio, the provincial road connecting other cities on the island crosses through the city centre. Various interviews with citizens and tourists have confirmed the need for having safer and better marked pedestrian crossings, particularly in areas adjacent to the port.

To meet the needs of citizens and tourists and increase the safety of pedestrians on road crossings, a preliminary viability study was carried out both in Portoferraio and Rio. In particular, the study concerned the two ports and adjacent areas to establish the points that most need safe road crossings for pedestrians.

## A1 Objectives and outputs

### City policy level objectives

- Increase the safety of pedestrians on road crossings
- Limit the speed of cars on critical roads near port areas

### Measure specific objectives

- Improve the safe access of pedestrians who reach the ferries in Portoferraio
- Give more visibility to drivers on some road crossings in Portoferraio and Rio
- Make the road crossing on the inter-municipal road that crosses through the centre of Rio more clearly visible and safe
- Renew existing crossings and create new ones with special paint to give greater visibility and safety for pedestrians

### Outputs

#### Municipality of Portoferraio:

- Design of a new raised and lighted pedestrian crossing in the ancient part of town (Via Senno, near the ancient Medici walls)
- Design of conventional pedestrian crossings in the urban area (Via Vittorio Emanuele II)
- Design of two new roundabouts and four pedestrian crossings in the ferry harbour area and in the rear port area

Extra-output during DESTINATIONS, funded by Portoferraio municipality and by the Port Authority:

- Implementation of a new raised and lighted pedestrian crossing in the ancient part of the town (Via Senno - near the ancient Medici walls)
- Renovation of conventional pedestrian crossings in the urban area (Via Vittorio Emanuele II)

- Implementation of two new roundabouts and four pedestrian crossings in the ferry harbour area and in the rear port area

#### Municipality of Rio:

- A large raised road crossing (made of rubber/plastic material) was installed in the provincial road that crosses the city centre
- All the existing pedestrian crossings were improved and renewed in the port area
- Five traditional road crossings with safety signals were realised along the provincial road

### Supporting activities

In Portoferraio, flat pedestrian crossings and roundabout designs have been introduced with the cooperation of the Port Authority. All the Portoferraio implementations were financed directly by the municipality and by Port Authority.

## A2 Inter-relationship with other measures

This measure is connected with **ELB 3.2**, which concerns improving accessibility to certain areas of the cities. The improvement in accessibility of some areas for citizens and tourists is also linked to the existence of pedestrian road crossings that allow them to be accessed safely, especially for the elderly. An example is the two port areas of Rio and Portoferraio which, although of tourist interest, were difficult to access before this measure as they were not equipped with safe road pedestrian crossings.

## A3 Target groups and/or affected part of the city or region

- Citizens and tourists of Portoferraio
- Citizens and tourists of Rio

## A4 Stakeholders involvement

| Stakeholder name             | Activities description  |
|------------------------------|---|
| Municipality of Portoferraio | Design and implementation planned measure                                   |
| Municipality of Rio          | Design and implementation planned measure                                   |
| Portoferraio Port Authority  | Implementation of pedestrian crossing in port areas of Portoferraio and Rio |

**Table 1:** Stakeholder involvement

## B Measure implementation

### B1 Situation before CIVITAS

In Rio and Portoferraio and at other suburban pedestrian crossings, there are no specific safety installations/devices beyond the normal white stripes painted on the road.

Particularly in Rio, the crossings are mainly situated on the very busy provincial road, and since these road crossings were painted a long time ago, are not very visible, with serious risks for pedestrians, which is accentuated by the speed of the cars.

### B2 Innovative aspects

The innovative aspects of this measure were related to:

- Overall study area: Normally the location of road crossings is chosen according to the needs of the single road. Instead, detailed studies of the whole interest areas in the two cities were made. These studies identified the most useful pedestrian road crossings in the examined areas, which led to a good and in-depth analysis of their viability and roads' structure, and to an estimation of their level of safety for pedestrians. Following this, the intervention priorities were defined and some specific points were selected to have the interventions implemented first.
- The methodology used in some cases for the identification of dangerous pedestrian crossings, made on the basis of information received by citizens and urban policemen regarding accidents involving pedestrians on Elba's road network.
- The use of prefabricated rubber and plastic material to make the raised pedestrian crossing in Rio, which has never previously been used in Elba.
- In Portoferraio, the realisation of the raised and lit pedestrian crossing.

### B3 Research and technology development

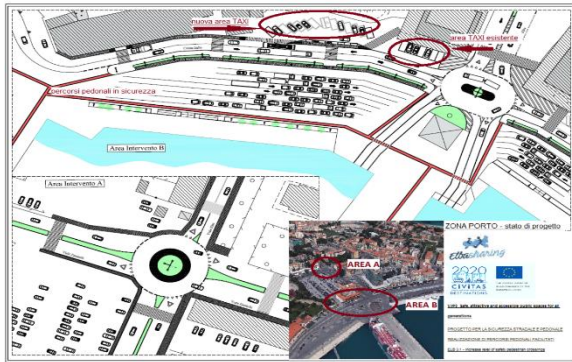
No specific technology needs.

### B4 Actual implementation of the measure

The development of this measure proceeded through the implementation of three main activities, strongly related with the study of the cities' road network, dangerous pedestrian road crossing identification and re-design, and pedestrian road crossing implementation.

#### Study of the cities' road network

The technical departments of the two municipalities carefully examined the road networks in the two cities, and carefully analysed the criteria of comfort and safety that should have been taken into account for the realisation of the new pedestrian road crossings. It led to a good and detailed analysis of viability and road structure, and to an estimation of the level of safety for pedestrians in many areas of the cities.



**Figure 1:** Design of pedestrian crossings in the port area



**Figure 2:** Via Senno crossing with signal lights

**Dangerous pedestrian road crossings identification and design**

After identifying the areas in which new road crossings were particularly needed and the existing road crossings to be improved, the technical departments proceeded to design the most suitable by selecting different shapes and materials based on their location and visibility.



**Figure 3:** Rubber pedestrian crossing in the provincial road



**Figure 4:** Road crossing design and implementation

**Pedestrian road crossings implementation**

**Portoferraio:**

- New traditional pedestrian crossings (Fig.1) were implemented in the front port area, corresponding to the arrival points of the ferries. As shown in Figure 5 below, this area is very crowded with pedestrians, cars, and trucks at the arrival point for the ferry. Therefore, these works were made in collaboration with the Port Authority.
- An illuminated and raised crossing was completed in Via Senno (Fig. 2), located in front of the “Porta a Terra”, the ancient entrance to the old city from the land.
- Several pedestrian crossings in the rear port area were improved and renewed, as shown in Figure 6.



**Figure 5:** Traffic jam in Portoferraio port area

**Figure 6:** Pedestrian road crossing renewed in Portoferraio old port implemented.

**Rio:**

- As the location for the new planned pedestrian road crossing was particularly dangerous, the Municipality contacted a specialised firm. It was in the centre of the city, on a long straight road, often crossed by cars not respecting the speed limit. The specialised company made the crossing with a mixed material of resins and rubber (Fig. 3) which is particularly resistant and modular so that, over the years, worn parts can be easily replaced. One raised road crossing in the town centre and five traditional ones, but with safety signals, were also implemented along the provincial road.
- Rio Municipality realised numerous new traditional road crossings, both in the city centre and along the road that runs along the sea. Many other existing ones have been improved and maintained.



**Figure 7:** Traditional road crossing along the coastal road

## C Impact evaluation

### C1 Evaluation approach

#### Expected impacts and indicators

| Impact category | Impact indicator   | Unit of measure |
|-----------------|--|-----------------|
| Society         | 1-Acceptance level of new road crossings regarding safety in Rio and Portoferraio                  | %               |
| Society         | 2- Increase level of pleasantness of citizens and tourists on walking area of Portoferraio and Rio | %               |

**Table 2:** Expected impacts and indicators

#### Method of measurement

| Impact indicator   | Method* | Frequency |      |       | Target Group                                | Domain (demonstration area/city) |
|--|---------|-----------|------|-------|---|----------------------------------|
|  |         | Before    | Dur. | After |   |                                  |
| 1-Acceptance level of new road crossings regarding safety in Rio and Portoferraio                  | S       | n.a.      | n.a. | M48   | Citizens / Tourists of Rio and Portoferraio | Rio Portoferraio                 |
| 2- Increase of pleasantness level of citizens and tourists on walking area of Portoferraio and Rio | S       | n.a.      | n.a. | M48   | Citizens / Tourists of Rio and Portoferraio | Rio Portoferraio                 |

\*(Data collection (DC), Estimation (E), Survey (S))

**Table 3:** Method of measurement

#### Detailed description of the indicator methodologies:

**1 - Acceptance level of new road crossings regarding safety in Rio and Portoferraio** - The information was collected by Rio and Portoferraio Municipalities through several interviews conducted during August 2020. These were asked to tourists and citizens in the city centre with the question “Are you satisfied of the safety of road crossing installed in the centre”. The answer was Yes or No. 140 people were surveyed in Portoferraio and 132 in Rio.

**2 - Increase pleasantness level of citizens and tourists of pedestrian crossings in Portoferraio and in Rio** – After the construction of works, interviews were conducted by municipal staff of Portoferraio and Rio in August 2020. Citizens and tourists were asked for their opinion if “the increased safety of new road crossing incentivised their walks”. The answer was Yes or No. 140 people were surveyed in Portoferraio and 132 in Rio.

#### The Business-as-Usual scenario

There were no indicators regarding the acceptance of road crossings prior to the measures carried out by the project. The municipalities, if not involved in the project, would have continued the ordinary maintenance of the existing crossings, while with the project, the situation of all the most dangerous road areas were reviewed and new crossings made at the most critical points.



## C2 Measure results

| Impact category | Impact indicator   | Unit of measure | Baseline | Ex-Ante | Ex-post |
|-----------------|--|-----------------|----------|---------|---------|
| Society         | 1- Acceptance level of new road crossings regarding safety in Rio and Portoferraio                 | %               | n.a.     | 60%     | 80%     |
| Society         | 2- Increase of pleasantness level of citizens and tourists on walking area of Portoferraio and Rio | %               | n.a.     | 60%     | 80%     |

**Table 4:** Measure results

### C2.1 Society

#### 1- Acceptance level of new road crossings regarding safety in Rio and Portoferraio and 2- Increase of pleasantness level of citizens and tourists on walking area of Portoferraio and Rio

The ex-post data relating to the aforementioned indicators was collected during August 2020, both with interviews with the traffic police of Portoferraio and Rio and mainly with interviews with tourists who normally already visit the island during that period.

Regarding road crossing accidents, the only data available from the municipal police for both Rio and Portoferraio concerned serious road accidents. In past years, there have been no serious accidents relating to pedestrian crossings but only near accidents that, unfortunately, are not recorded. For this reason, surveys and interviews were conducted after the construction of the works, asking citizens and tourists for their opinion regarding the safety of the new road crossings. Most of the interviewees acknowledged that the new crossings ensured greater safety for pedestrians.

The people interviewed also confirmed that the safety of these new road crossings made their walks more enjoyable.

## C3 Quantifiable targets

| No   | Target  | Rating |
|--|---|--------|
| 1  | Reduction of road accident risks for pedestrians, with particular benefit for vulnerable road users (disabled and elderly people, children, etc.) | NA     |
| 2  | Incentive tourists and citizens to walk in the urban area   | NA     |
| 3  | *More than 60% of people were satisfied of the new road crossings in Portoferraio and in Rio  | **     |
| 4  | *More than 60% of people believed that the new crossings stimulate walking  | **     |
| <b>NA = Not Assessed O = Not Achieved * = Substantially achieved (at least 50%) ** = Achieved in full *** = Exceeded</b> |   |        |

\*New target, not in GA

**Table 5:** Assessment of quantifiable targets

Regarding the impacts reported in the Grant Agreement, after having implemented all the actions envisaged in the measure, in the evaluation phase it became clear that the impacts indicated in the GA were not quantitatively measurable, although the actions clearly contribute to the reduction of road accidents and improve the accessibility of pedestrians.

However, the construction of new and more efficient road crossings does reduce the risks for pedestrians and in particular for the most vulnerable groups, such as the elderly, children, etc. Furthermore, functional and safe road crossings encourage citizens and tourists to take safe walks both in urban centres and in places of tourist attractions.

Targets 3 and 4 were Achieved in Full. The qualitative evaluation of the works carried out was obtained through interviews asking for judgments with regard to their functionality and safety.

The interviews carried out in August 2020 both in Portoferraio (140 people interviewed) and in Rio (132 people interviewed) confirmed the acceptance from citizens and tourists towards the work done to improve city road crossings, with 80% positively answering the questions. In order to have a consistent number of interviews, no division was made by gender or age.

## C4 Up-scaling of results

Not applicable

# D Process Evaluation Findings

## D1 Drivers

- Improving pedestrian safety is essential for an island like Elba which has the development of sustainable tourism as its main objective
- At the political level, the two municipalities considered the improvement of pedestrian safety to be very important with the creation of appropriate road crossings. The technical staff of the two municipalities actively participated in the survey for the evaluation of the works carried out
- Citizens and tourists have shown good willingness to respond to interviews regarding the efficiency and safety of the new road crossings

## D2 Barriers

- The municipal police of both Rio and Portoferraio do not keep a register to record small accidents due to crossing city streets.
- Initially motorists do not like changes to the road network

## D3 Lessons Learned

When creating new crossings, a compromise must be found between pedestrian safety and the need for car traffic. Also, interviews conducted near a crossing are often much more positive than those conducted in other places.

## **E Evaluation conclusions**

The measures provided for in ELB 3.1 are extremely simple as they are related to road crossings. However, they are very important for pedestrians, especially for the elderly (residents and tourists) who live or spend their holiday in Portoferraio or in Rio.

The results obtained from the interviews for these simple (but well-studied) interventions were very positive, confirming that citizens and tourists appreciated the interventions made.

## **F Additional information**

### **E1 Appraisal of evaluation approach**

As mentioned, for a better assessment it would have been necessary for the two municipalities to have kept a register of near accidents at least for city road crossings. From a comparison of their quantity before and after the realisation of the new works, an objective evaluation could have been made.

However, the evaluation obtained through interviews with citizens and tourists regarding the degree of acceptance of the works carried out equally allows an evaluation of the works.

### **E2 Future activities relating to measures**

The two municipalities will have to keep the new road crossings efficient through timely maintenance activities.