RESCCUE tool

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AQUATEC

Ajuntament de Granollers

Panelist/speakers presentation

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Speaker

Name

(Work: …… …..)

Focus: ……

Moderator

Name

(Work: …… …..)

Focus: ……

Speaker

Name

(Work: …… …..)

Focus: ……

Speaker

Name

(Work: …… …..)

Focus: ……

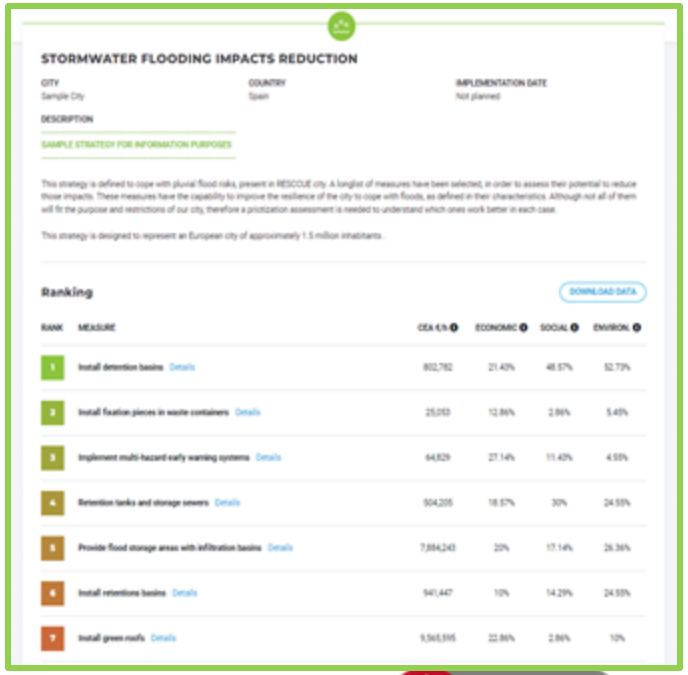
Tool description

- Developed within the framework of the H2020 RESCCUE project (Resilience to Cope with Climate Change in urban areas).

  -Access at: adaptationstrategies.resccue.eu

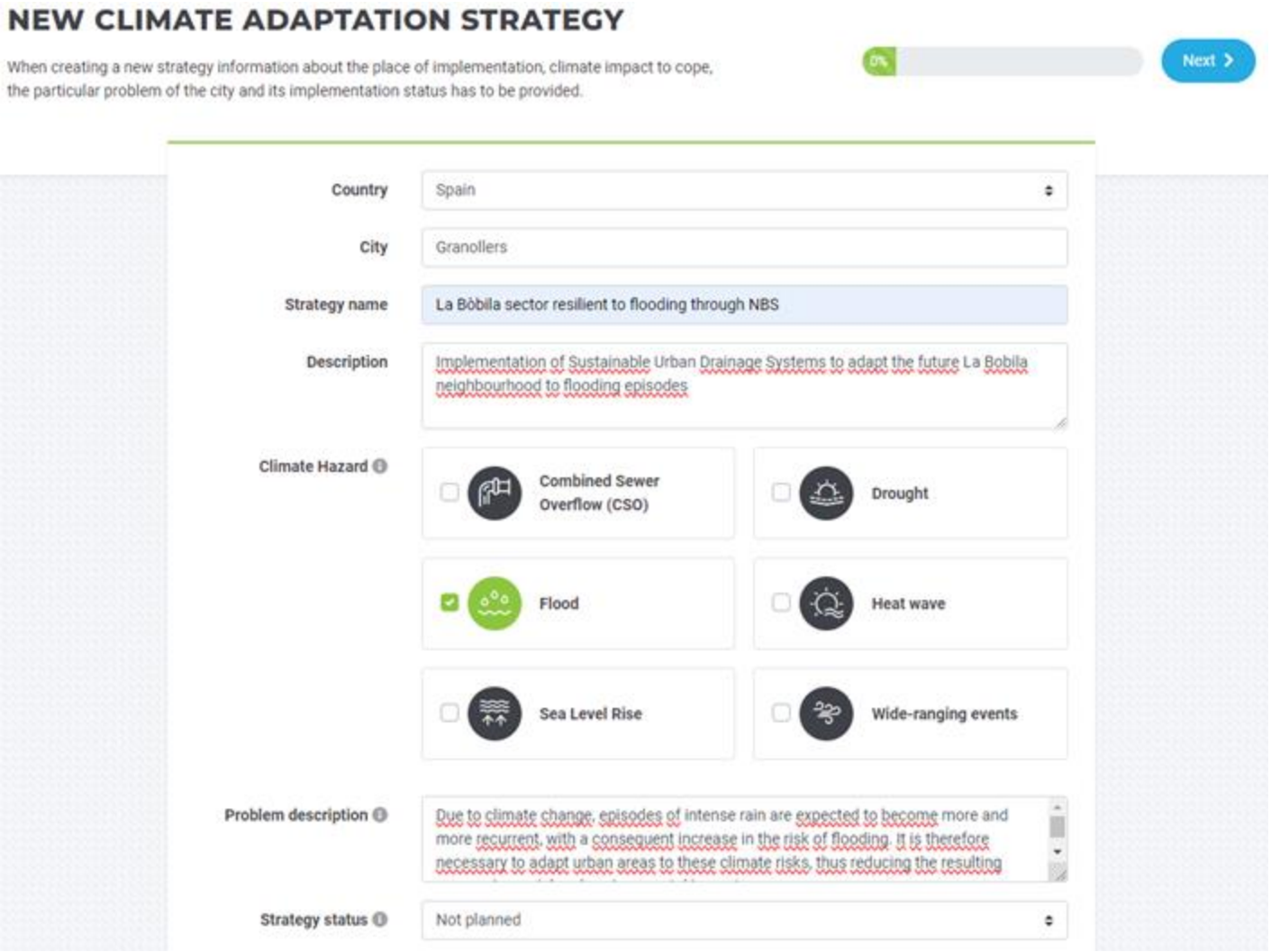
  -Updated at: icariastrategies.eu

- Methodology, database and support tool for decision-making to develop the optimal strategy to achieve a climate-resilient neighborhood/city, based on:
  - Implementation costs (and other expenses)
  - Efficiency of the measures
  - Associated environmental, social and economic co-benefits



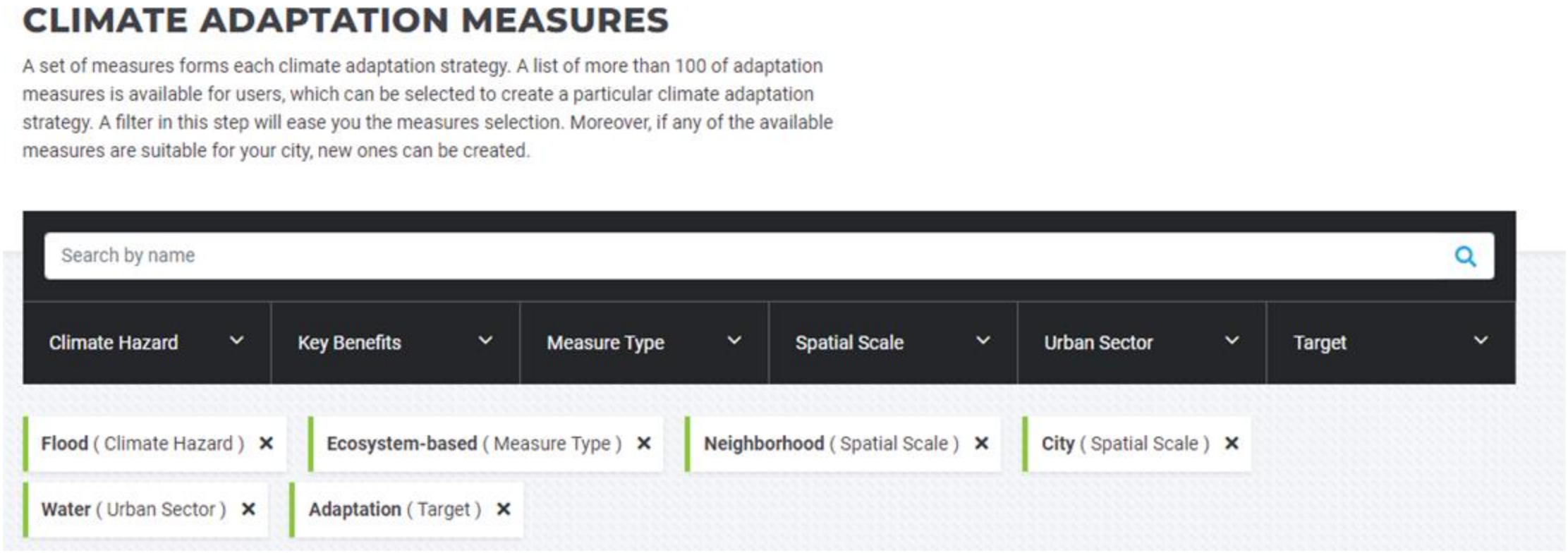
Methodology

1. Definition of a new strategy



Methodology

2. Pre-selection of measures from the RESCCUE database



Methodology

2. Pre-selection of measures from the RESCCUE database

Adding rain gardens before sewer inlet points

An additional point of connection from the roof drainage rain water down pipe. Removing the first few mm of rain before discharging to the sewage network via an overflow system.

- **Category:** Structural / Ecosystem-based
- **Application Scale:** Building
- **Sector:** Water / Social / Health / Environment
- **Target:** Adaptation

Select | More info

Install retentions basins

These type of basins store stormwater during heavy rainfall events, controlling the downstream flow and, consecutively, the flooding risk. Retention basins hold a permanent pool of water (wet basins), having a higher residence time and promoting physical-chemical and biological treatment processes through infiltration and vegetation and microbial activity (TSS, organic matter, nutrients and heavy metals). Both retention and detention basins have inlet and outlet structures and the water level drops slowly as the water flows out of the basin into a nearby water course or sewer.

- **Category:** Structural / Ecosystem-based
- **Application Scale:** River Basin
- **Sector:** Environment / Mobility / Social / Water
- **Target:** Adaptation

Select | More info

Install green roofs

Green roof belongs in the category of Sustainable Urban Drainage Systems (SUDS) and aims at source controlling. A green roof or living roof is a roof of a building that is partially or completely covered with vegetation and a growing medium, planted over a waterproofing membrane. Primary objective is the reduction of storm-water runoff as part of a sustainable drainage system.

- **Category:** Structural / Ecosystem-based
- **Application Scale:** City
- **Sector:** Water / Social / Environment
- **Target:** Adaptation

Select | More info

Permeable paving

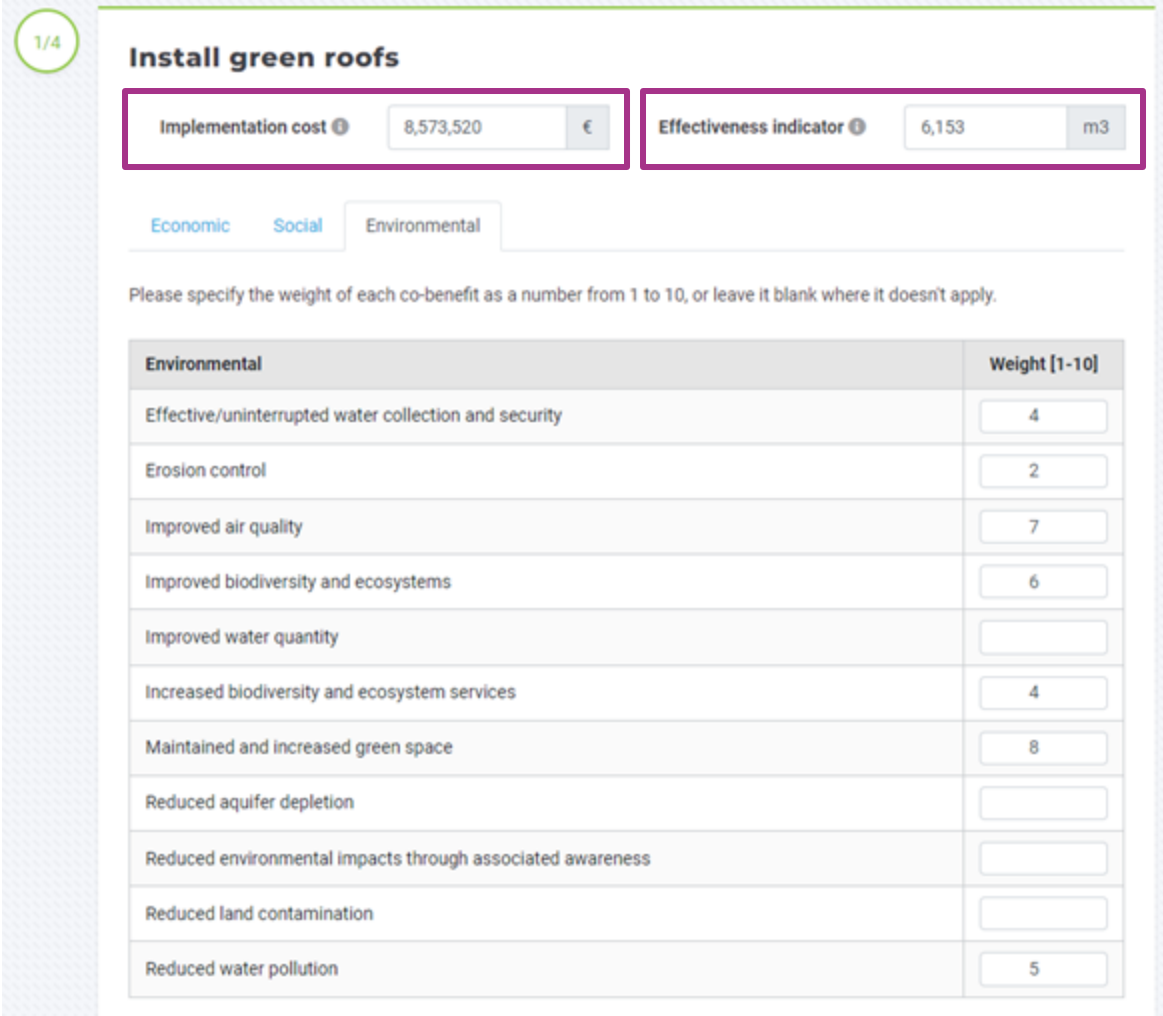
Permeable paving or pervious pavement is a range of sustainable materials and techniques that provide a pavement suitable for pedestrian and/or vehicular traffic, while allowing stormwater to infiltrate through the surface and into the underlying structural layers. Types of surfaces include: modular permeable paving, porous asphalt, grass reinforment, porous concrete, etc. This measure is part of the called Sustainable Urban Drainage Systems (SUDS).

- **Category:** Structural / Ecosystem-based
- **Application Scale:** City
- **Sector:** Water
- **Target:** Adaptation

Select | More info

Methodology

3. Completion of data regarding cost and efficiency of measures



Supporting data or tools should be needed to provide this information

Methodology

4. Preliminary results based on cost-effectiveness

PRELIMINARY ASSESSMENT: Climate Adaptation Measures Ranking

The ranking of the entire set of measures that form this strategy is presented here. This ranking is based on four parameters: 1) Ratio Investment over effectiveness indicator, and co-benefits 2) economic, 3) social, and 4) environmental. The weight of each parameter is adjustable according to your specific interests.

75% Back Next

		Change weights	25%	25%	25%	25%
RANK	MEASURE		CEA €/m3	ECONOMIC	SOCIAL	ENVIRON.
1	Provide flood storage areas with infiltration basins		188	7.14%	11.43%	42.73%
2	Install green roofs		11,477	25.71%	12.86%	32.73%
3	Install filter trenches		3,538	8.57%	5.71%	30.91%
4	Permeable paving		3,296	7.14%	4.29%	13.64%
5	Construction of anti-flood retention tanks		3,425,000	0%	0%	6.36%

Methodology

5. Multi-criteria analysis

Final multi-criteria ranking results

Order by: ○ Criterion ◉ Scenario

DOWNLOAD DATA

SCENARIO	COSTS (ESTIMATED)	QPEAK REDUCTION	RUNOFF VOLUME REDUCTION	
A La Bobila_green roofs	8,573,520 € 5	240 L/s 4	747 m3 3	5
B La Bobila_infiltration trenches	1,256,774 € 2	2,060 L/s 2	2,535 m3 1	1
C La Bobila_pervious pavement	6,976,462 € 4	1,440 L/s 3	2,438 m3 2	2
D La Bòbila_infiltration basins	105,750 € 1	190 L/s 5	562 m3 4	3
E La Bòbila_stormwater retention tank	3,425,000 € 3	2,740 L/s 1	m3 5	4

Application in Granollers pilot

Simulations for quantifying the efficiency indicators (Runoff volume and Peak flow) per scenario:

- Target base scenario (diagnosis): current natural scenario
- Business as Usual scenario (prognosis BAU): urbanization + conventional drainage system
- Resilience scenarios: urbanization + flood resilience solutions
  - Stormwater retention tanks
  - Green roofs
  - Pervious pavements
  - Infiltration trenches
  - Infiltration basins

Contribution to the Granollers' prototype

Guidelines for a greener city with opportunities for everyone

Guide of standards in urban planning including a set of usable criteria and a toolbox of resources and strategies to be applied in the development of new liveable urban areas, with the perspective of decarbonization, **climate-resilience** and social cohesion.

Contribution to the recommendations related to the promotion of sustainable urban drainage systems as cost-efficient measure to:

- Increase urban resilience to flooding episodes
- Manage stormwater in a decentralized way
- Increase pervious surfaces and green areas

THANK YOU!

Social media:

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