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iDEAL - DEcision support for Adaptation pLan

Priority Axis: Safety and resilience

Specific objective: 2.1 - Improve the climate change monitoring and planning of adaptation measures tackling specific effects, in the cooperation area

WP3 DEFINITION AND MONITORING OF CLIMATE ADAPTATION PLANS

Activity 3.2 CLIMATE ADAPTATION PLANS

(5) Climate Adaptation Plans - Introduction

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PP2 - IUAV UNIVERSITY OF VENICE

Partners involved:

LP - IRENA – Istrian Regional Energy Agency

PP1 - MUNICIPALITY OF PESARO

PP3 - MUNICIPALITY OF MISANO ADRIATICO

PP4 - CITY OF DUBROVNIK DEVELOPMENT AGENCY DURA

PP5 - REGIONAL NATURAL PARK “COASTAL DUNES FROM TORRE
CANNE TO TORRE SAN LEONARDO”

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Summary

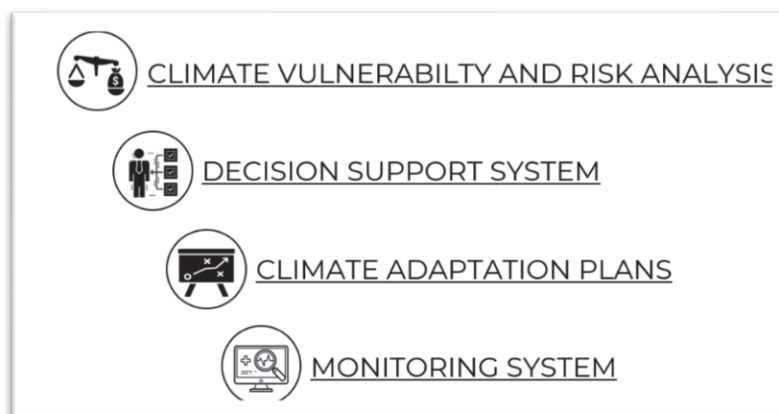
Introduction

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Introduction

Based on the knowledge provided by the climate vulnerability and risk analysis and the already implemented policies and actions, the **Climate Adaptation Plans** have been elaborated for cities and park areas concerned.

The PPs involved, have started the **process of adopting the climate adaptation plans** developed, with different intensity, which will guarantee their sustainability with the activities and ordinary budgets of the institutions involved, with the support of the financial plans provided at national and regional level by the national climate adaptation strategies. The implementation progress of the project has clarified, for each partner what implementation phase these plans have managed to achieve, whether **drafted or definitive**, or how to perfect and / or update existing plans. It depended on data, knowledge and information available.



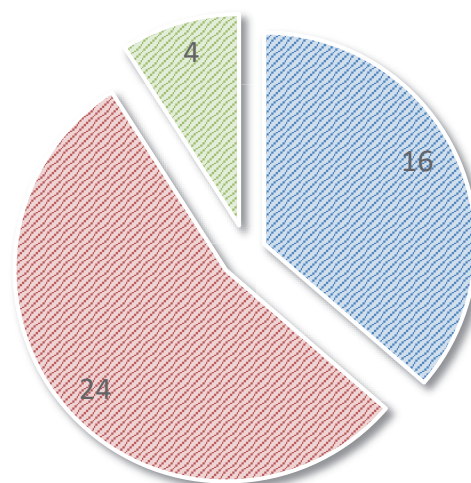
The **database created**, managed and updated by IUAV, with the best European and worldwide climate adaptation practices and measures, has been consulted as source of inspiration and useful benchmarking. For each **climate adaptation plan**, the entire series of **proposed actions** was evaluated using a specific **decision support system**, in order to understand the most useful measures to achieve the decision maker's objectives and, more generally, to address urban resilience. Moreover, in order to pursue a constant improvement of local situations in terms of adaptation and sustainability, a simple **monitoring system** has been created. The Climate Adaptation Plans model (based on climate vulnerability and risk analysis, assessed by the DSS, and monitored by a simple monitoring system) is transferable to any other organisation/ region/country facing climate change adaptation. The Mayors Adapt Initiatives and the Associations of Municipalities operating at national and regional level in Italy and Croatia has been the main channels for transferring.

Among the many aspects, it is interesting to denote the Climate Adaptation Plans of iDEAL partners, based on the types of actions contained within them. In scientific and gray literature, it is possible today to identify some recurrent classes, which well identify actions, measures, and strategies that are increasingly being undertaken to face the impacts induced by climate change. These can be summarized as follows;

- *Gray infrastructures*
- *Green Infrastructures / NbS*
- *Local policy*

- ▨ Grey solutions
- ▨ Green solutions
- ▨ Regulamentary measureas
- ▨

The former identifies the set of **engineering solutions**, based on an artificial functioning dynamic. These are characterized by an increasing need for maintenance, which entails a considerable economic cost, which guarantees in working. The second ones, increasingly used for some years now, are based on the exploitation of organic dynamics of **natural ecosystems**, capable of delivering ecosystem services, benefits and aesthetic value to spaces. The maintenance they require is constant, and numerous studies show a decreasing trend. Finally, local policies consist of strategies aimed at changing the **adaptive capacity** of society, acting on the behavioral sphere. This can be encouraged or not through various economic tools, which facilitate the effectiveness of the measure, and the achievement of its purpose.



As well illustrated above, most of the proposed actions by the partners are physical (91%). This data could be considered in relation to contexts study, which shows the need to physically adaption CC impacts. Deepening these actions, it is possible to note with immense pleasure, as the **green infrastructures** / NbS represent the main preferred solution (55%), leaving a secondary role to the use of gray infrastructures (36%). These results show how Italian and Croatian institutions and municipalities involved in iDEAL, have acquired a good environment sensitivity, thanks to iDEAL which has favored green, sustainable, **multifunctional** adaptation measures.

Next, the study of the types of action contained in the partners' plans:

Municipality of Vrsar: 9 actions: 7 grey actions, 2 green solutions

Selected actions:	Grey infrastructures	Green infrastructures	Regulamentary measures
<i>Water heat pumps</i>	X		
<i>Waves to energy</i>	X		
<i>Overtopping Breakwater</i>	X		
<i>Sea kite</i>	X		
<i>Deep Green</i>		X	
<i>Natural shading and planting</i>		X	
<i>Protection of coastal infrastructure – Rovinj</i>	X		
<i>Protection of coastal infrastructure – Vrsar</i>	X		
<i>Protection of coastal infrastructure - Poreč</i>	x		

Municipality of Dubrovnik: 12 actions: 5 grey actions, 7 green solutions

Selected actions:	Grey infrastructures	Green infrastructures	Regulamentary measures
<i>Parking lots alteration</i>		x	
<i>Sea Wall</i>	x		
<i>Green roof</i>		X	
<i>Green roof</i>		X	
<i>Green roof</i>		X	
<i>Natural shading</i>		X	
<i>Green parking lot</i>		X	
<i>Green parking spaces with filter strip</i>		X	
<i>Green parking lot</i>		X	
<i>White roof, street "a" "b"</i>	X		
<i>White roof</i>	X		
<i>White roof</i>	X		

Municipality of Pesaro: 6 actions: 2 grey actions, 4 green solutions

Selected actions:	Grey infrastructures	Green infrastructures	Regulamentary measures
<i>Greening brownfield area, by Nbs</i>		x	
<i>Recovery dune coastal environment of Sottomonte Area</i>		X	
<i>Implementation of a New school NZEB, with NbS.</i>	x	x	
<i>Building of a real estate complex</i>	x		

<i>Restoring cliffs ecosystem service</i>		X	
<i>Greening</i>		x	

Municipality of Misano Adriatico: 10 actions: 2 grey actions, 6 green solutions, 2 policies

Selected actions:	Grey infrastructures	Green infrastructures	Regulamentary measures
<i>Reduction of cooling needs in tourist accommodations</i>			x
<i>Improve outdoor microclimate of tourist accommodations</i>	X		
<i>Enhancing the permeability of big parking lots</i>		x	
<i>Water savings in camping sites and beach resorts</i>			x
<i>NBS as traffic calming solutions</i>		X	
<i>Cycle paths adapting to climate change</i>		x	
<i>Greening the water front</i>		X	
<i>Urban forestation</i>		X	
<i>SUDS along transport infrastructures</i>		X	
<i>New practices tackling coastal erosion</i>	X		

Dune Costiere Park: 7 actions: 5 green solutions, 2 policies

Selected actions:	Grey infrastructures	Green infrastructures	Regulamentary measures
<i>Dry Agriculture</i>		x	
<i>River Contract</i>			x
<i>Restoration and Management of Biodiversity in the Park</i>		x	
<i>Conservation of the last Italian peninsular population of Tetrax tetrax</i>		x	
<i>Green connections</i>		X	
<i>Coastal monitoring</i>			x
<i>Recovery of coastal dunes</i>		X	