



Built Environment
leArning for Climate
AdaptatiON



The Cultural Landscape of Portovenere, Cinque Terre, and the Islands in Northern Italy How to Tackle Climate Change in the case of a Coastal UNESCO Site

Giulia Melis - Andrea Di Maggio



LINKS Foundation, Torino, Italy - Future Cities and Communities
CCE City Climate and Environment Research Program

University of
HUDDERSFIELD
Inspiring global professionals



Co-funded by the
Erasmus+ Programme
of the European Union

Porto Venere, Cinque Terre and the islands (Palmaria, Tino and Tinetto)

Located in Liguria Region, Italy, the site was included the site in the World Heritage List in 1997, based on criteria (ii), (iv) and (v).

- 1997 - Nomination: 7 municipalities, 2 parks
- 2016-2018 - Current management system
- 2016/2021 - Buffer Zone



«The eastern Ligurian Riviera from Porto Venere to the Cinque Terre is a **cultural landscape** of exceptional value which represents the **harmonious interaction established between man and nature** to create a landscape of exceptional quality, which manifests a millenary traditional **way of life** and which continues to play a **major socio-economic role** in the life of society»



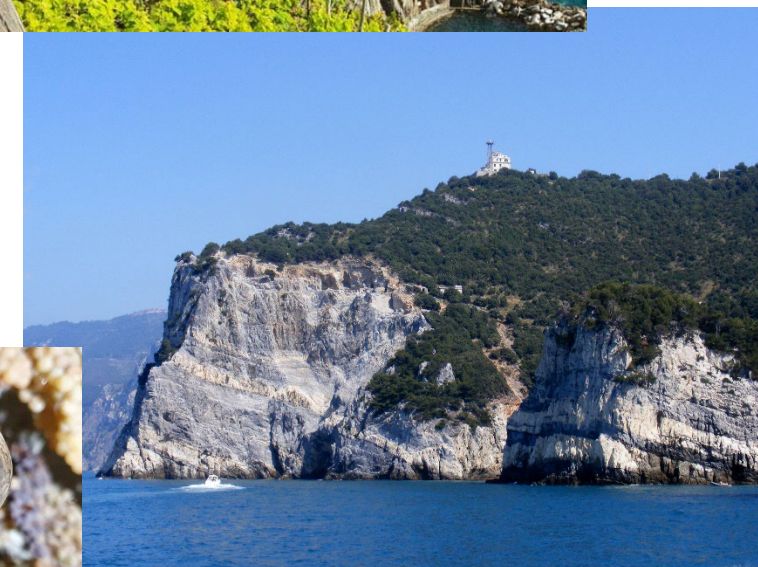
Site attributes

Tangible:

- Valleys, basins and cliffs
- Natural habitats
- Terraces and dry-stone walls
- Network of paths and pedestrian paths
- Compact and separate settlements
- Rural artefacts
- Mooring system
- Traditional cultivations
- Typical agri-food production

Intangible:

- Traditional lifestyle
- Relationship with the sea

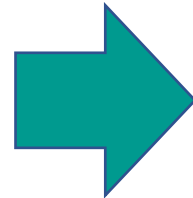


Management

Complex site → multiplicity of actors → central and peripheral state structures → management instrument is the **Program Agreement**

Signee of the Program agreement

- Liguria Region
- Ministry of Tourism
- Cinque Terre National Park
- Municipality of Porto Venere
- Regional Natural Park of Porto Venere
- Municipalities of Levanto, Monterosso al Mare, Pignone, Riomaggiore, La Spezia, Vernazza, Beverino, Riccò del Golfo.



Management structure of the site divided into different bodies:

- Site Manager (alternating)
- UNESCO site office
- Coordination Committee
- Technical-administrative working group
- Community of Municipalities of the buffer zone

→ **Future:** further involvement of NGOs, associations, citizens

Challenges

Management challenges: complex territory with a variety of stakeholders; fragmentation and lack of shared and coordinated planning mechanisms; complex framework of thematic laws and provisions for planning.

Cultural and social challenges: institutional governance structure dependent on political elections and decisions; dynamics in local communities (aging, depopulation).

Economic challenges: unsustainable and discontinued financial scheme; limited capability in taking funding opportunities.

Environmental challenges: climate change, extreme events, worsening of conditions and chain effects



Flood in Monterosso

Climate Change threats

The area is **climatologically sensitive**: it is at the same time a coastal area and a border area between the Alpine and the Mediterranean climate.

Direct consequences:

- increase in the **frequency of extreme events and intensity of rainfall**
 - floods and landslides
 - damage to physical UNESCO **attributes** (buildings, paths, terraces, etc.)
- increase in the **days of drought**
 - risk of desertification, loss of vegetation, impacts on agriculture
 - increased risk of fires
- Rising of the **sea levels**
 - rise of saline waters in rivers and intrusion into coastal aquifers



Flood in Vernazza, 2011



Via dell'Amore trail, 2012

Climate Change threats

By changing the conditions of life and activities in the UNESCO site, climate change contributes to exacerbate several other dynamics undergoing on the cultural landscape site.

Indirect consequences:

- **depopulation** of the affected areas
 - Loss of human capital and knowledge, abandonment of traditional practices
 - touristification, houses become B&b's, loss of local activities and services for citizens
- abandonment of **traditional agriculture** and other activities of land management
 - abandonment of **terraces**, fundamental to land stability and water management
 - Loss of traditional knowledge of land management

Year	RIOMAGGIORE		MONTEROSSO		VERNAZZA		PORTO VENERE	
	Res.	Var. %	Res.	Var. %	Res.	Var. %	Res.	Var. %
2012	1.626	-2,40%	1.473	-0,07%	899	-2,39%	3.637	-1,46%
2013	1.610	-0,98%	1.479	0,41%	879	-2,22%	3.763	3,46%
2014	1.591	-1,18%	1.476	-0,20%	864	-1,71%	3.677	-2,29%
2015	1.576	-0,94%	1.464	-0,81%	848	-1,85%	3.630	-1,28%
2016	1.542	-2,16%	1.468	0,27%	852	0,47%	3.588	-1,16%
2017	1.496	-2,98%	1.422	-3,13%	824	-3,29%	3.543	-1,25%
2018	1.483	-0,87%	1.409	-0,91%	800	-2,91%	3.510	-0,93%
2019	1.429	-3,64%	1.402	-0,50%	779	-2,63%	3.420	-2,56%

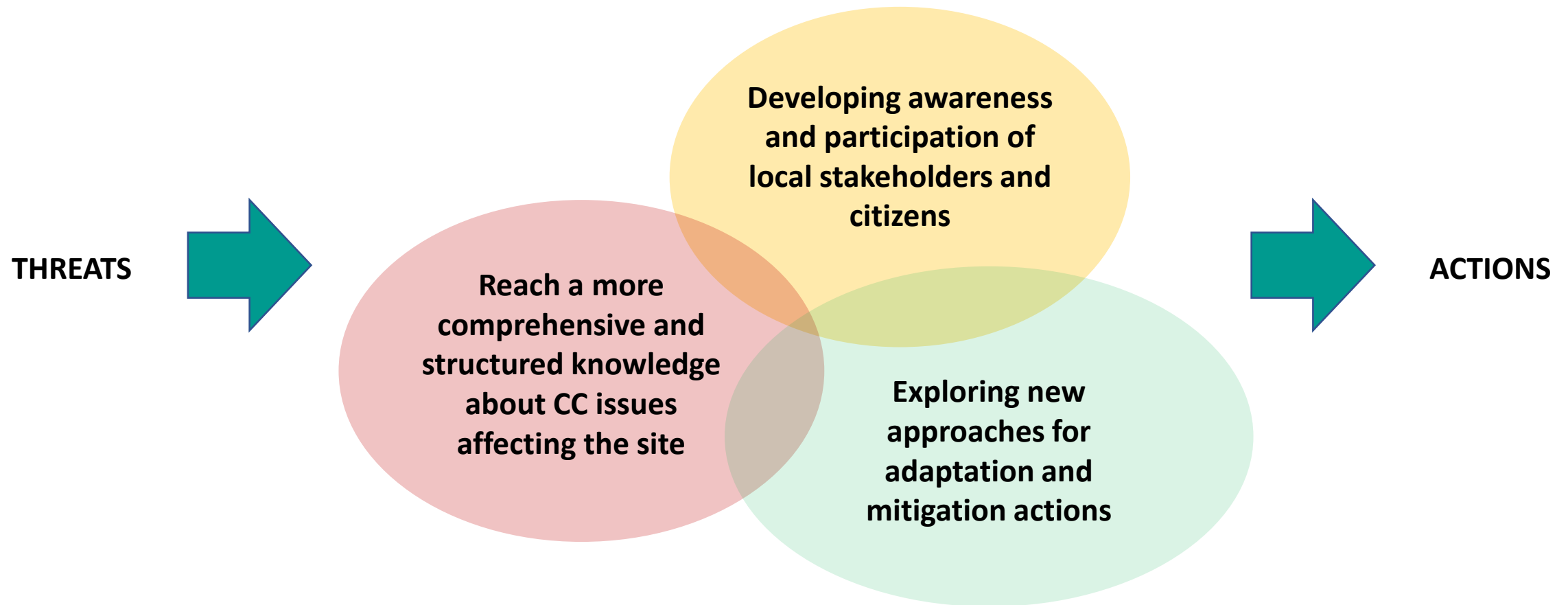


Riomaggiore station



Terrace collapse

Strategies for the protection of CH assets



Actions

Extreme events frequency, rainfalls, droughts, wildfires, floods, landslides

- Actions aimed at **greater cohesion, improvement of management and administrative effectiveness** (UNESCO site management, territorial planning tools, park plans, etc.) ■ ■ ■
- Development and adoption of **tools for data management, visualization** (RescueMe Horizon EU, etc.) ■
- **Disaster Risk Management Plan**, municipal emergency plans, further security actions (local alert communication systems for tourists and citizens, training synergies between emergency stakeholders – population + CH -, trigger thresholds for opening and closing the paths to the public, etc.) ■ ■ ■
- Adoption of the **Heritage Impact Assessment methodology** (for Cultural Heritage risk management) ■ ■



Stakeholders meeting for the site drafting of the Management plan



Proteggere Insieme voluntary body dedicated to protection of CH

Building knowledge

adaptation and mitigation

Awareness and participation

Actions

Depopulation, abandonment of agricultural practices, cultivated lands, terraces

- Municipal and Regional policies of **funding and support** (*Banca Regionale della Terra*, etc.) ■ ■ ■
- 5Terre Park's actions (support to farmers, stone walls maintenance and training, cartographic databases with PSR funds, *Stonewalls4life* project) ■ ■ ■
- **Mapping of abandoned areas and terraces** through ordinary activities and ad hoc projects (National Park activities, etc.) ■
- **NGO's and citizens associations actions** (thematic tours, capacity building activities, education activities with schools, etc.) ■
- **participation and co-creation** with local stakeholders, use of new participatory techniques (RescueMe EU project) ■ ■

Building knowledge

adaptation and mitigation

Awareness and participation



Stone walls maintenance



Thank you!

Giulia Melis

LINKS Foundation

