



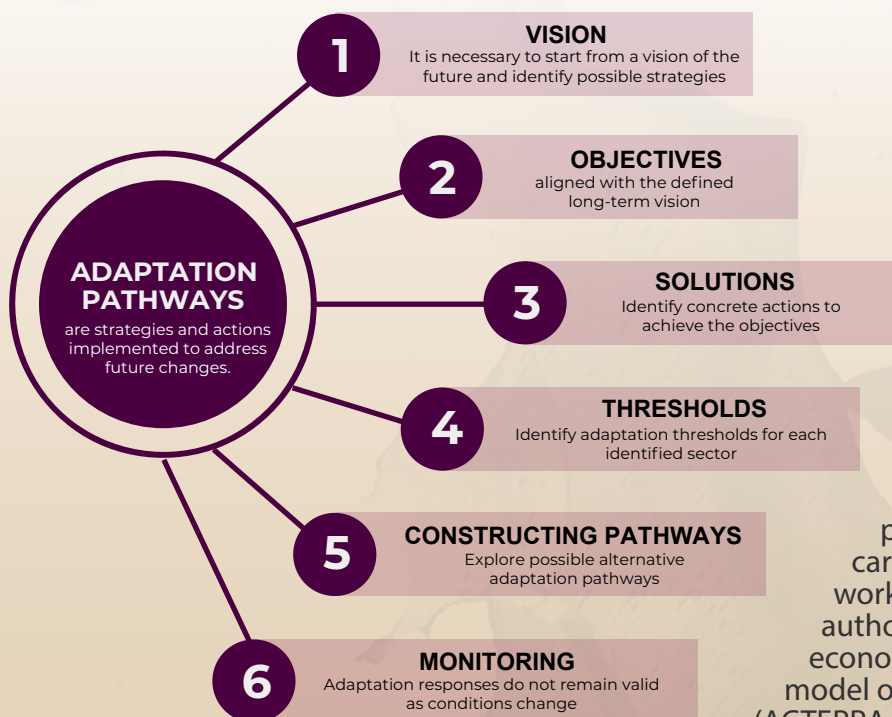
PARTICIPATORY CLIMATE ADAPTATION PATHWAYS

PROJECT DATA

- 3 workshops
- 26 participants
- 8 pathways developed

➤ 3 Sectors of interest analyzed:

- Agriculture and fisheries
- Nature Conservation and Water System
- Protection of infrastructures and settlements



Within the framework of the TransformAr project (Horizon 2020), the Marceddì lagoon has been the focus of a co-creation process aimed at defining transformative adaptation pathways to climate change. This process was carried out through a series of participatory workshops, organized in collaboration with local authorities, research centers, associations, and economic stakeholders, following the operational model of the Adaptation Pathways Playbook (ACTERRA, Verhaert, et al., 2023)

(<https://app.transformar.eu/adaptation-pathways>)

The activities focused on the analysis of climate risks, the collective construction of transformative visions, and the development of action plans based on impact scenarios.

Climate Risk Chain

The Marceddì lagoon and its surrounding territory are exposed to a combination of climate change-related threats: extreme weather events, soil salinization, sea level rise, and heatwaves. These phenomena endanger not only the biodiversity and ecological functioning of the lagoon, but also traditional productive activities such as agriculture and fishing.

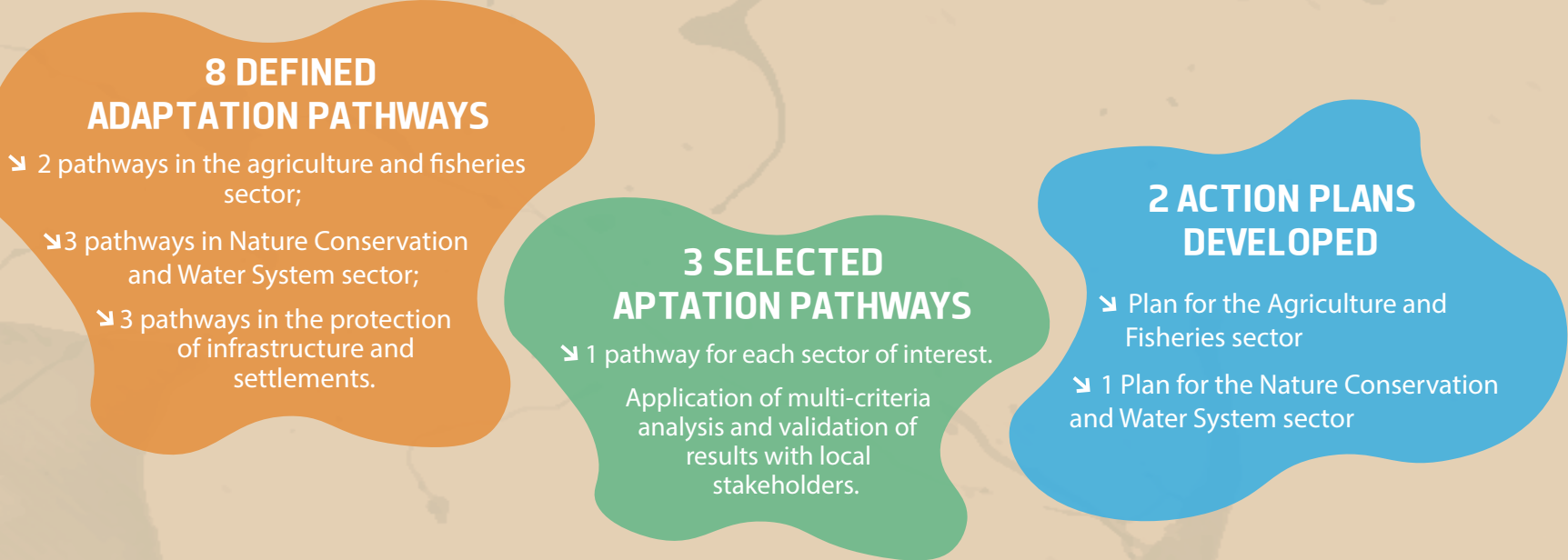
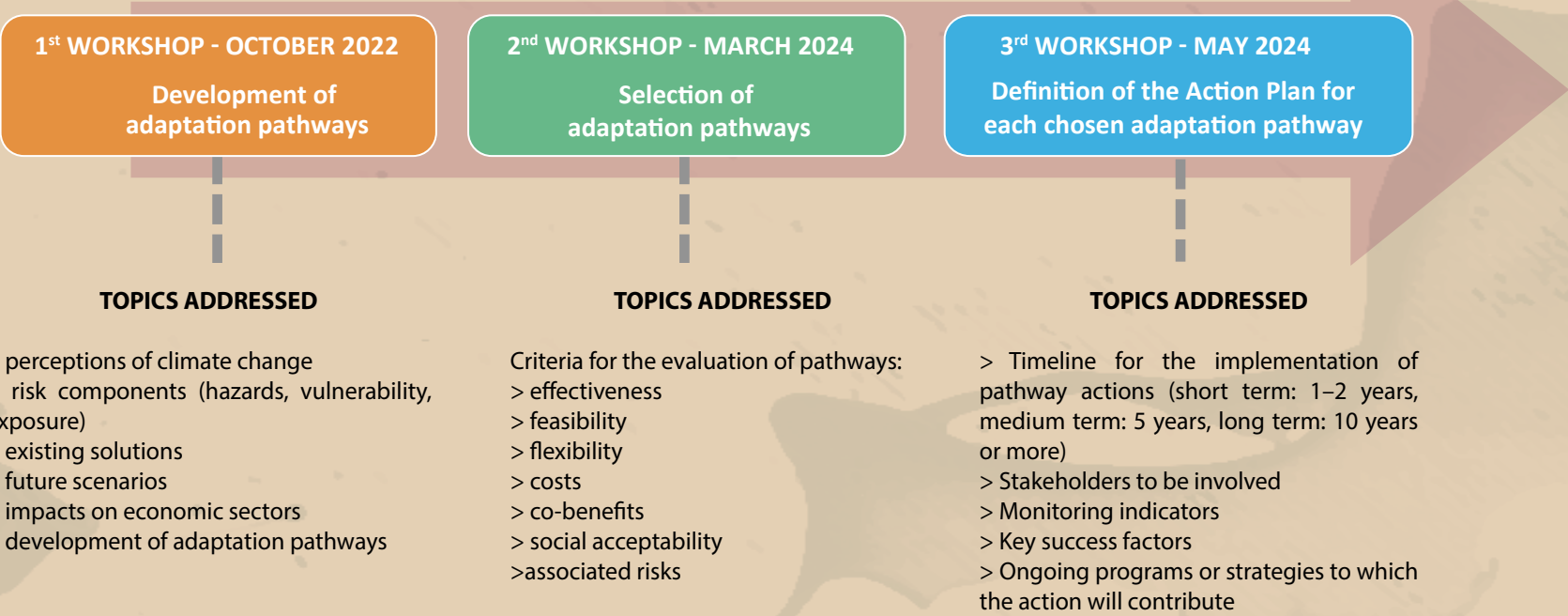
The vulnerability of the system is exacerbated by fragmented governance, limited local response capacity, and the weakness of hydraulic infrastructures. The main risks identified concern the decline in agricultural and fishing productivity, the loss of habitats and ecosystem services, and the gradual erosion of the cultural and identity heritage of the coastal landscape.

Stakeholders involved

The participatory process saw the active involvement of stakeholders from a wide range of sectors: agriculture, fisheries, scientific research, environmental conservation, water management, public administrations, technical consultancy, and active citizenship. Representation was particularly strong in the agricultural and scientific sectors, while the fisheries sector showed more limited participation in some meetings, due to the technical perception of the activities and overlapping work commitments.

The 3 phases of the adaptation pathway

An adaptation pathway is a sequence of adaptive measures, planned over time according to risk thresholds and shared future visions, which guides the transition toward sustainable solutions to address climate change, while emphasizing transformative approaches and flexible, integrated responses.

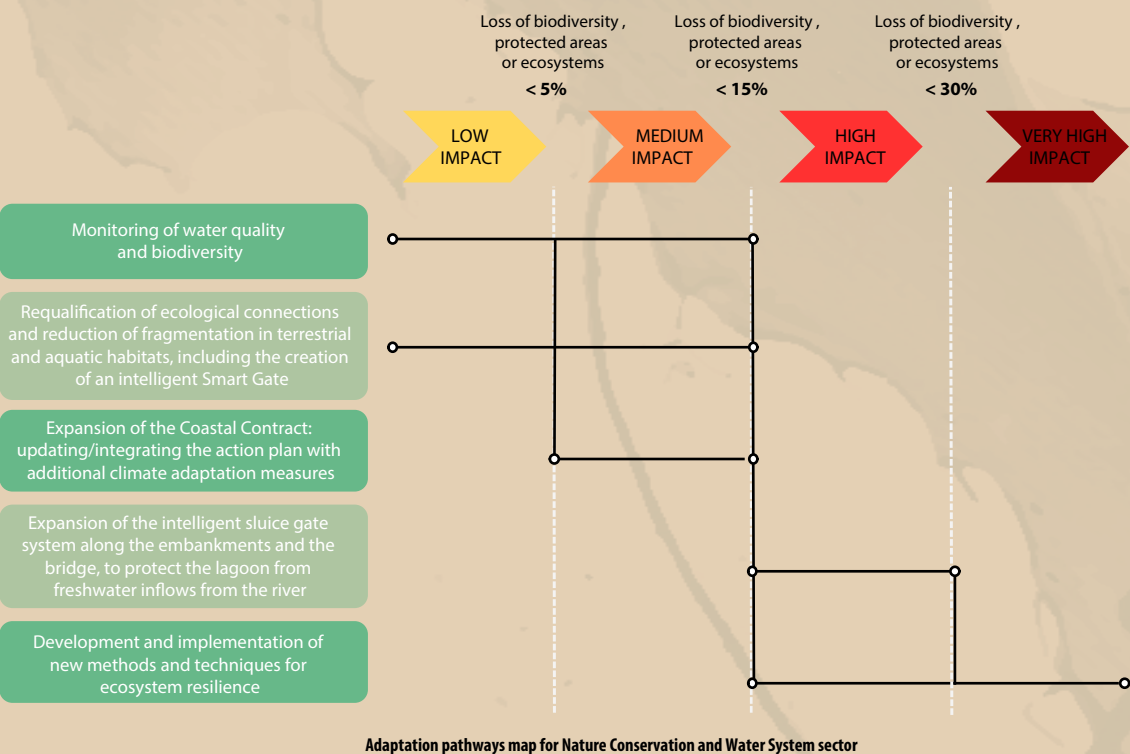


Action Plans for the chosen adaptation pathways

The action plan aims to operationalize the selected adaptation pathways through multi-criteria analysis.

Action Plan – Agriculture and Fisheries Sector
The adaptation plan, developed with the direct contribution of farmers and researchers, outlines a progressive pathway to strengthen the resilience of the agriculture and fisheries sector in the face of climate change impacts. The planned actions include the introduction of innovative practices – such as precision irrigation, the use of drones, and the valorization of resilient species – as well as diversification of crops and fishing activities, also through the controlled use of invasive species. In the event of more critical climate scenarios, the plan foresees more structural measures, such as the relocation of production facilities, the adjustment of regulations on fishing and harvesting, and the activation of insurance tools and compensation funds. The effectiveness of the plan will be monitored through specific indicators, while its success will depend on enabling tools such as technical training, generational renewal, integration of databases, and coordination through a permanent technical working group.

Action Plan – Nature Conservation and Water System
The action plan for nature conservation and water system aims to strengthen the resilience of the lagoon system and protect biodiversity, integrating environmental management objectives with those of climate change adaptation. The planned measures include: strengthening ecological and water quality monitoring, introducing adaptive hydraulic systems (such as “SMART GATÉs”) to better manage water flows, and protecting ecological connectivity between different wetlands. Particular attention is devoted to the sustainable maintenance of canals and banks, in order to maintain a balance between hydraulic needs and ecosystem functionality. The Coastal Contract is identified as a key tool to ensure coordination among public bodies, local communities, and stakeholders, promoting integrated and participatory planning. Although the plan was not the subject of a specific workshop, it was validated through targeted consultations with experts and local stakeholders in the environmental sector.



STRENGTHS

- Clear methodological structure articulated in progressive phases
- Multi-sectoral involvement (agriculture, environment, research, public authorities)
- Integration of scientific knowledge and local expertise
- Connection with existing planning tools (e.g., Coastal Contract)
- Active participation in the definition of scenarios and actions, fostering a sense of ownership and legitimacy

WEAKNESSES

- Uneven participation, with limited involvement from the fisheries and aquaculture sector
- Complexity of content requiring facilitation support that was not always sufficient
- Lack of interactive digital tools to explore scenarios in real time
- Absence of a post-workshop communication strategy to engage local stakeholders between meetings
- Institutional planning timelines too slow compared to the urgency of required interventions

WORKING GROUP

Francesca Etzi (MEDSEA)
francescaetzi@medseafoundation.org

Manuela Puddu (MEDSEA)
manuelapuddu@medseafoundation.org

Margaretha Breil (CMCC)
Katie Johnson (CMCC)
Antonio Trabucco (CMCC)

Therefore, there is a need to strengthen technical support, adopt inclusive tools, and bridge the gap between co-design and concrete implementation.

REFERENCES

ACTERRA, Verhaert, et al. (2023). Adaptive pathway Transformation Playbook, TransformAr Deliverable 3.2.1, H2020 grant no. 101036683

The Wetland Observatory supports the conservation and sustainable management of wetlands in Sardinia. It collects and analyzes environmental data to monitor ecosystems, threats, and conservation strategies. Through webGIS and technical reports, it disseminates information on ecological status, biodiversity, and ecosystem services, raising awareness of the importance of wetlands in tackling climate change.

Mediterranean Sea and Coast Foundation
Via Nazario Sauro, 1 - 09123 Cagliari - Italy
info@medseafoundation.org
www.medseafoundation.org



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