Acronym – MIRACLE

Title – Multi-risk Integrated Resilience Approach for Coastal Landscapes and Environments

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Iuav Role – Single Coordinator

Duration – 16 months

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Funding to Iuav – 339.170,00 €

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Description – Italy is very exposed to natural risks, particularly to those deriving from geological, seismic, volcanic, geomorphological, hydrological, hydraulic and meteorological events. Moreover there are other risks coming from pollution and other sources of environmental degradation. This calls for multi-risk and multi-scale approaches. Traditional planning tools are today incapable of capturing complex and multi-hazard relationships which must instead be approached through systemic and adaptive interventions. Water cities, such as river territories, delta regions and coastal landscapes are emblematic examples where multi-risks materialise. Those territories are very fragile and vulnerable places where various actors are called upon to identify concrete solutions to both mitigate climate change and adapt cities in the future.

The proposal introduces **three urban laboratories**, as physical arenas in which to experiment ideas together with citizens and stakeholders. They are intended as intimate spaces in which to test, validate and replicate adaptation measures and territorial-socio economic strategies through people engagement methodologies and processes. The aim is to co-create and co-design adaptive interventions and scenarios for improving urban metabolism and resilience of communities in multi-risk conditions.

The proposal analyses three **typified contexts**, from the analysis of which it will be possible to initiate broader considerations on how to deal with multi-risk conditions: **Bagnoli** (risks: pollution of land and water, geo-morphological risks with impacts on landscape, industrial and residential areas and heritage), **Verona** (risks: cultural heritage in che core centre, flooding and scarcity with impacts on agriculture and rural areas), **Rimini** (risks**:** coastal erosion, flooding and impacts on tourism economy).

Objectives – The proposal, in collaboration with local administrations, citizens and local companies, aims to contribute to the definition of involvement processes towards the collection and systematisation of information coming from people's perceptions in order to contribute to the definition of a cognitive framework useful for policies and governance of the territory.

The project also aims to experiment with new information technologies, for the collection of information, for the participatory definition of the multiple vulnerabilities. The renewed cognitive framework obtained will allow the systematisation of perceptive information coming from city users and stakeholders and physical-technical information produced by the University Iuav of Venice and the Planning & Climate Change LAB.

The proposed urban laboratories aim to demonstrate how specific and territorial projects, also through temporary uses in public spaces (vacant industrial heritage and cultural heritage), or innovative local policies (food policy or ecosystem services regulation) can become not only the driving force of territorial, urban and social regeneration processes generated through bottom up processes, starting from perceptions, citizens' needs and proposals, but also opportunities to redirect planning policies towards actions aimed at adapting cities to the impacts that multi-risks can generate on the metropolitan territories under metabolism perspective.

The main results will contribute to the improvement of the whole disaster risk management cycle, by looking at all the interrelated aspects. The proposal will deliver new and adaptive methodologies for understanding, reconceptualising and designing mitigation and adaptation strategies for environmental, natural and anthropogenic pressures. This new framework, by working on typified models, will improve resilience of local communities by providing holistic, multi-scale and multi-disciplinary approaches.