

Asset Level Modelling of RISKS In the Face of Climate Induced Extreme Events and ADAPTtation (RISKADAPT)

WP2 – Workshop meeting



Trieste Workshop meeting

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WP2

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- pilot site 3 (Cattinara Hospital) in a nutshell
- Platform PRISKADAPT main functions
- Platform PRISKADAPT Actions

WP2 – Pilot Site 3 (Cattinara Hospital) in a nutshell

Trieste on the Adriatic Sea, is surrounded by the Carsic hills that make the city particularly exposed to the Bora wind, which is intense and characterized by sudden strong gusts that can reach 130-150 km/h, therefore can cause damages specially in tall buildings like Cattinara Hospital.

So, the aim of pilot site 3 is to investigate the adaptation needs/solutions for Cattinara hospital in the face of successive high winds with/without wind-driven rain.

To select an adaptation solution there is a need to determine both the direct (technical) and indirect (societal) consequences produced after a physical damage to the Cattinara hospital.

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Main Functions

- Platform for Risk-informed Decision-Support-System on Adaptation Measures to Extreme Weather Events
- BIM: Building Information Model (Data Base Management System, Data Gaps and Model Information System MIS)
- User Friendly Frontend Interface with Enhanced Visualization.
- Set of metrics quantifying important parameters needed for adaptation decisions
- Identification of Data Gaps and Suggestions of Ways to Overcome them

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Actions

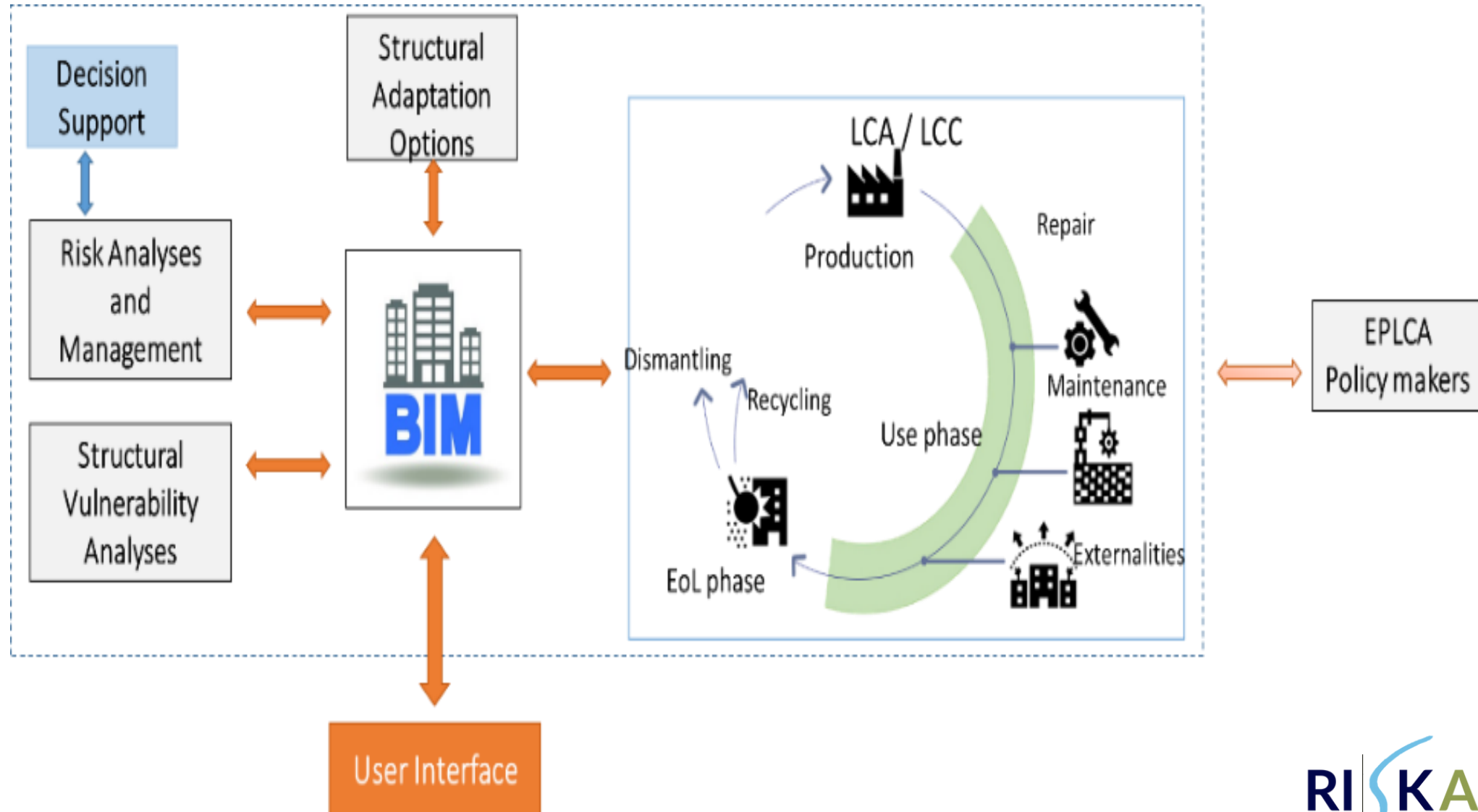
Determination of direct (technical) consequences and Sustainable Engineering Solutions

Direct technical consequences: Structural damage, loss of structural capacity, degradation of the mechanical characteristics of the materials, new loading systems, increased probability of structural failure, cost of repair, loss of functionality

Sustainable engineering solutions: for instance, reduced cement in a better concrete mix design, recycling and circularity strategies.

In addition, the time required for strengthening and whether the hospital can be fully/partially functioning during repair time will be investigated.

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Determination of indirect (societal) consequences of physical damage to the Cattinara hospital (the focus of this workshop).

Societal solutions

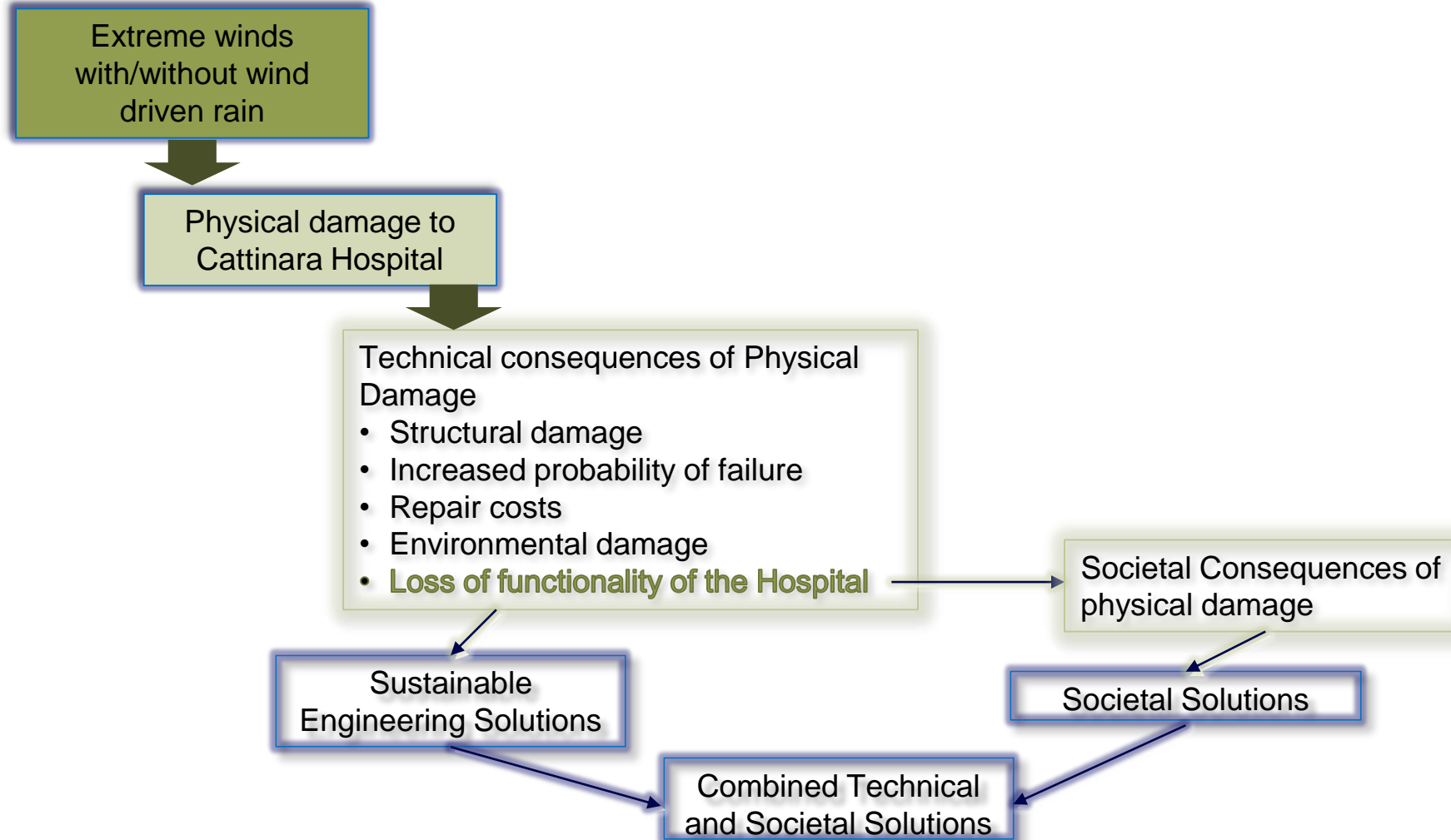
Indirect consequences include the impact of a non-functional Cattinara hospital to the local community wellbeing (e.g., health, economy)

Societal solutions: Include, for instance, subsidies to hospital suppliers during hospital downtime.

There is a need to determine who is mostly affected by hospital downtime and the type and extent of impact.

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Monetization and combination of indirect and direct consequences in the context of a complete risk analysis in order to prioritize adaptation measures



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Finally, the platform (PRISKADAPT) evaluates all promising technical solutions taking their societal consequences into account, while end users put weights to the various consequences (e.g., repair cost, environmental cost, impact on employment, etc.) for the final selection.

Note that most societal consequences are a function of the length of hospital downtime which is a function of the duration of repair (that is, the technical solution under study).

Abbreviations

EPLCA: European Platform for Life Cycle Assessment

LCA: Life Costs Assessment (environmental impacts associated with all the stages of the life cycle of the materials)

LCC: Life Cycle Costs

EoL: External Works Library

THANK YOU!

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