"Submersion": A board game for coastal risk exploration and adaptation planning

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IGE
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Sharing is encouraged

Introduction and game overview

This game is developed as educational material in H2020-PROTECT

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PROTECT is a European research project working on the projections of sea level rise in the future due to the melting of land ice

Sea levels are rising due to increased temperature and the melt of the cryosphere, affecting millions in the coming decades

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Submersion is a strategic collaborative board game

The objective:
limit the risk of submersion and adapt the beautiful coastal town of Sea-city

Gameplay mechanics

Decade after decade, what adaptation plan will you develop?

Sea level is rising, and the City Council must take preventive initiatives so that your city is safe from submersion

Collaborate to implement your adaptation plan with limited resources.

You lose if:
- too many inhabitants leave the city
- the city has no funds anymore
- the city's popularity drops to zero
- the town hall or factory is permanently submerged

DECADE	SSP1-2.6 LOW EMISSIONS sea level (in meters)	SSP5-8.5 HIGH ÉMISSIONS sea level (in meters)	SSP5-8.5 HIGH EMISSIONS + ANTARCTIC DESTABILIZATION sea level (in meters)
2020 — 2030	+0	+0	+0
2030 — 2040	+0,05	+0,05	+0,10
2040 — 2050	+0,10	+0,10	+0,25
2050 — 2060	+0,15	+0,15	+0,45
2060 — 2070	+0,20	+0,25	+0,70
2070 — 2080	+0,25	+0,35	+1
2080 — 2090	+0,30	+0,45	+1,35
2090 — 2100	+0,35	+0,60	+1,75
2100	+0,40	+0,75	+2,25

The turn sequence

There are a total of 5 Action Points (AP) for the decade.

1 AP can be used to :
- apply a Development or Adaptation Measure card
- trigger the Scientist’s research ability
- wait.

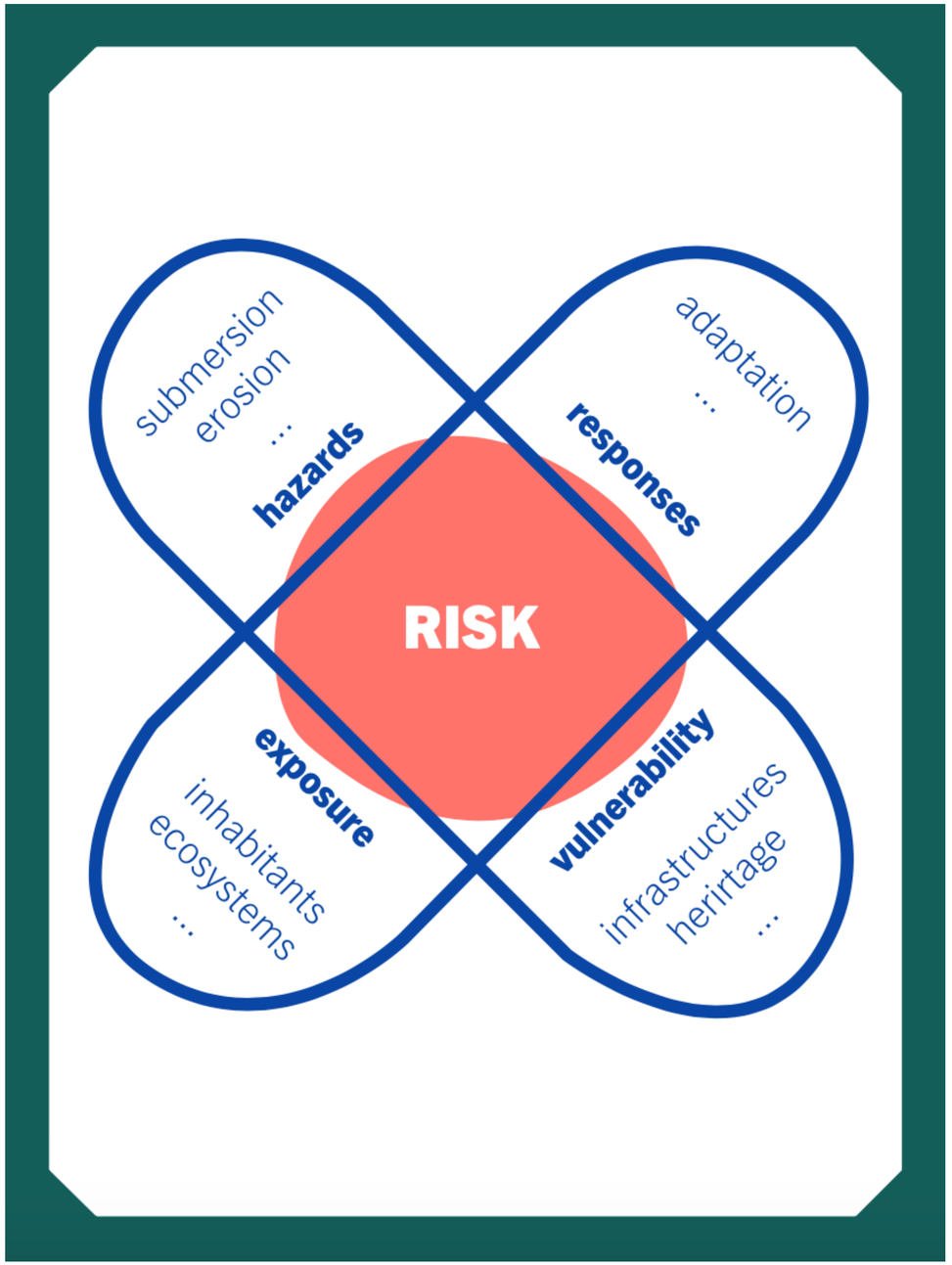
For each AP spent, an Event card is drawn, and its effects are applied immediately.

At the end of the turn, players check finances and popularity and check that all neighbourhoods are above the ”new” average sea level.

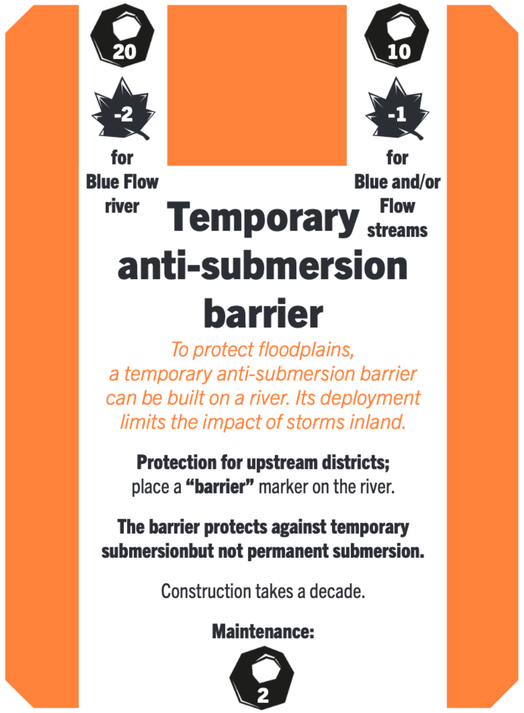
Five event cards punctuate the decade

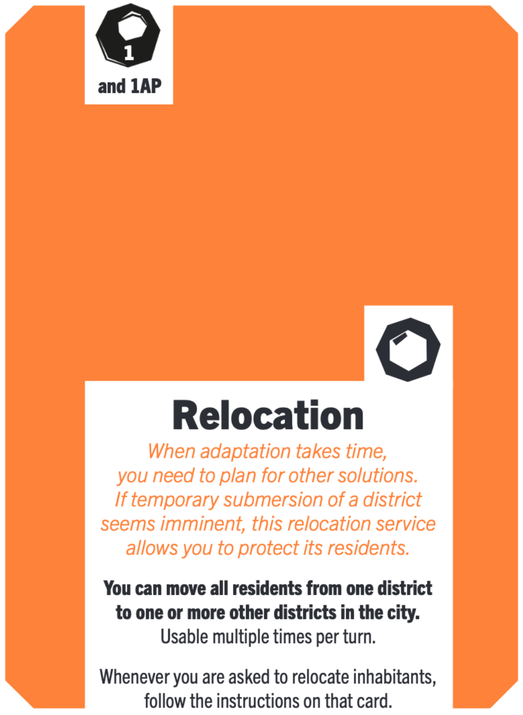
5 key educational objectives

1. Understanding Risk: Explore the concept of risk and its reduction strategies



2. Adaptation Responses: Learn about diverse responses to the risk of marine submersion





3. Climate Scenarios: Grasp the impact of different climate scenarios on sea level rise and adaptation difficulty

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4. Limits of Adaptation:

Understand the constraints and limitations associated with adaptation measures

5. Temporal Aspect: Recognize that adaptation requires time and advance planning

Building and implementation of adaptation measures take a least a decade

Further steps

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Further steps

We are editing the game for facilitated sharing (French and English version)

A training campaign is taking place at IGE for French teachers, together with a communication campaign, stay tuned!

We also have two other games resulting from the H2020 projet PROTECT, check them out:

Save the glaciers!
Escape Game (print-at-home and online) about glaciers

Expedition sea level
numerical interactive game for middle school students about links between sea level rise, ice melt, and human activities.

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Further steps

THANK YOU FOR YOUR ATTENTION !

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