



**Int. Workshop: “*The Cultural Dimension of the Ports from
the Black Sea and Danube Region*”**

August 17th 2022, Constanta, Romania

Port Cities in the Istro-Pontic Space: Smart and Blue Innovation

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Black Sea Universities Network

Istro-Pontic Space

The Born Place of a Fundamental Human Value

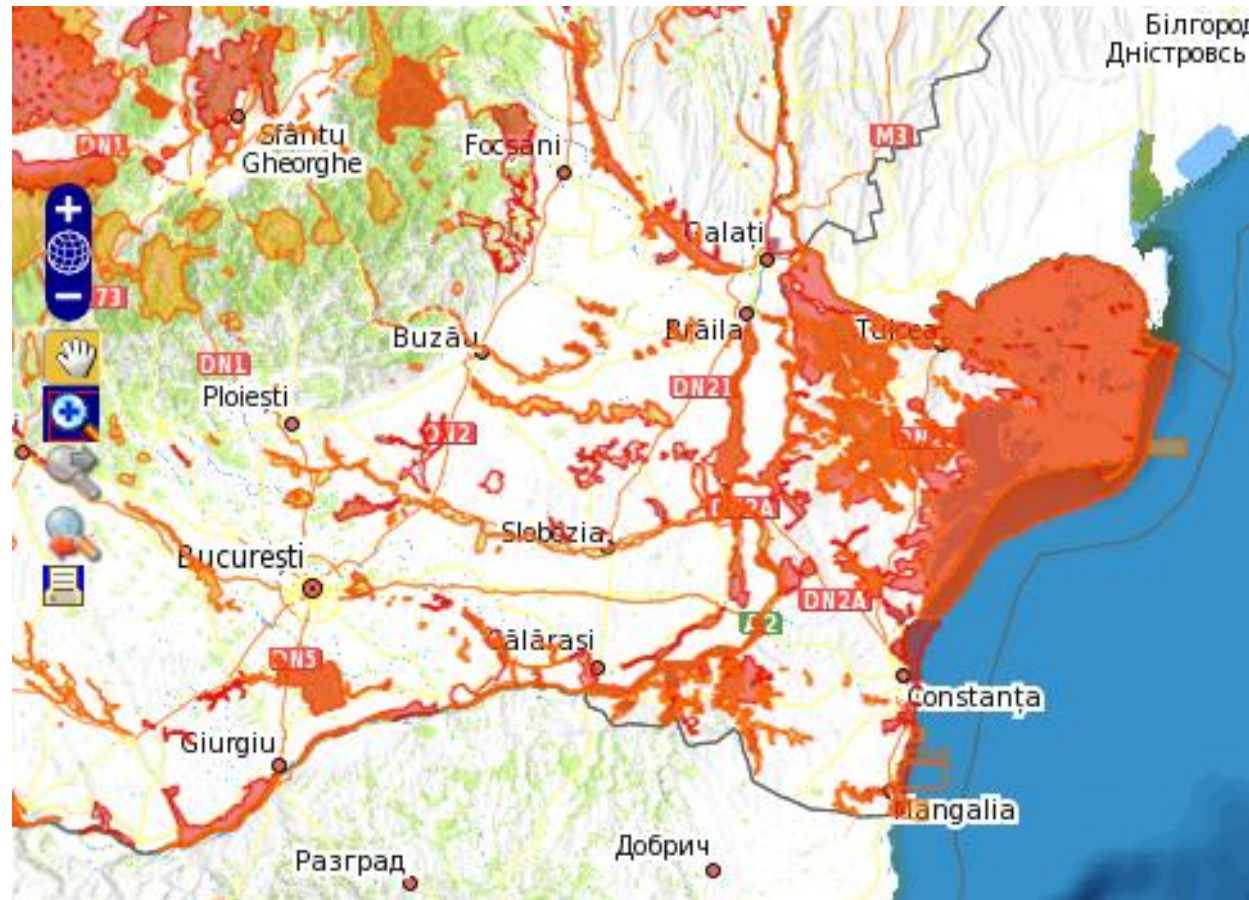
– *The Fascination to Explore and to Discover*



BUT LAGGING BEHIND



A VERY SENSITIVE ENVIRONMENT



Port Cities in the Istro-Pontic Space



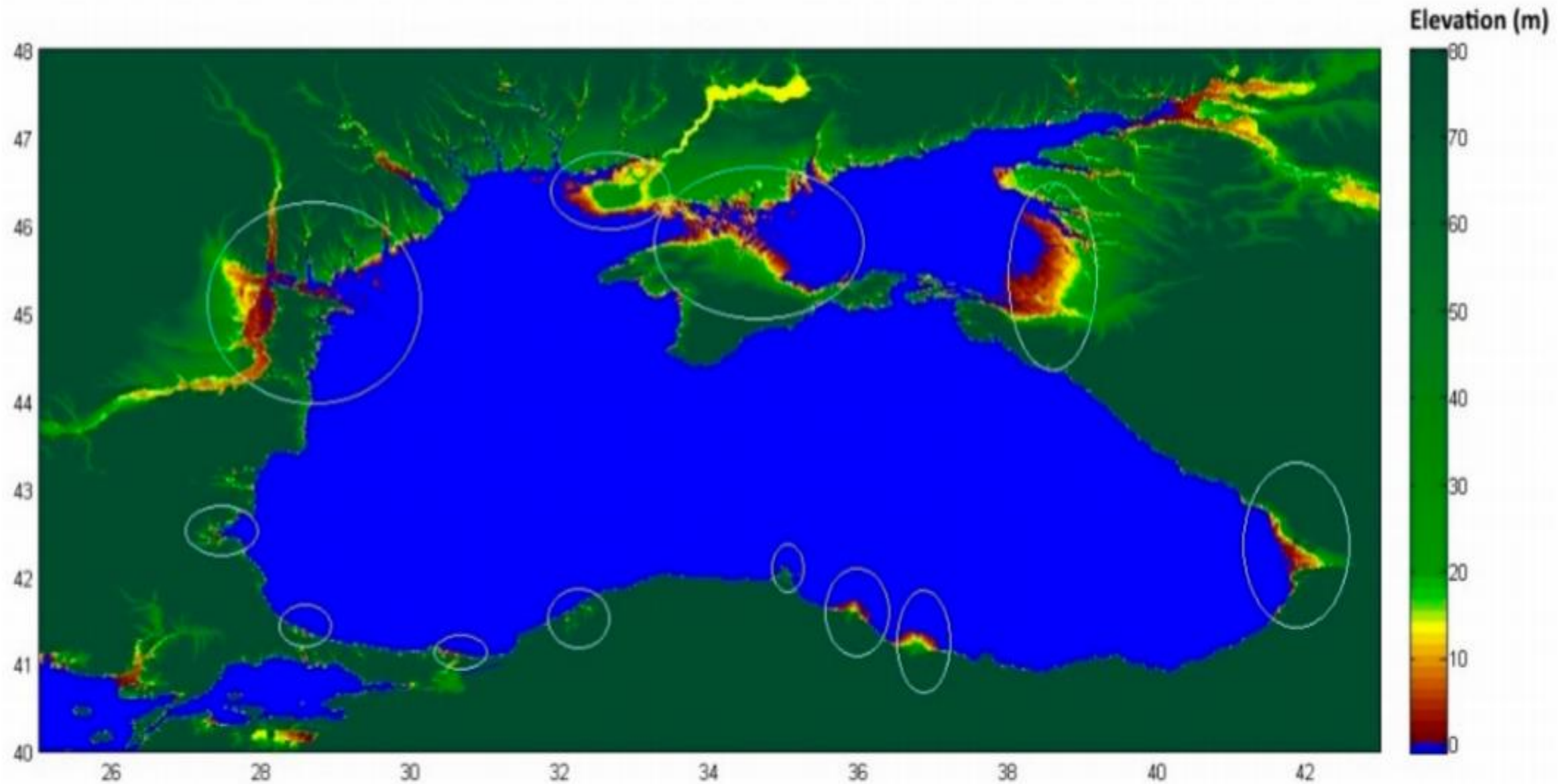
The Historical Sites



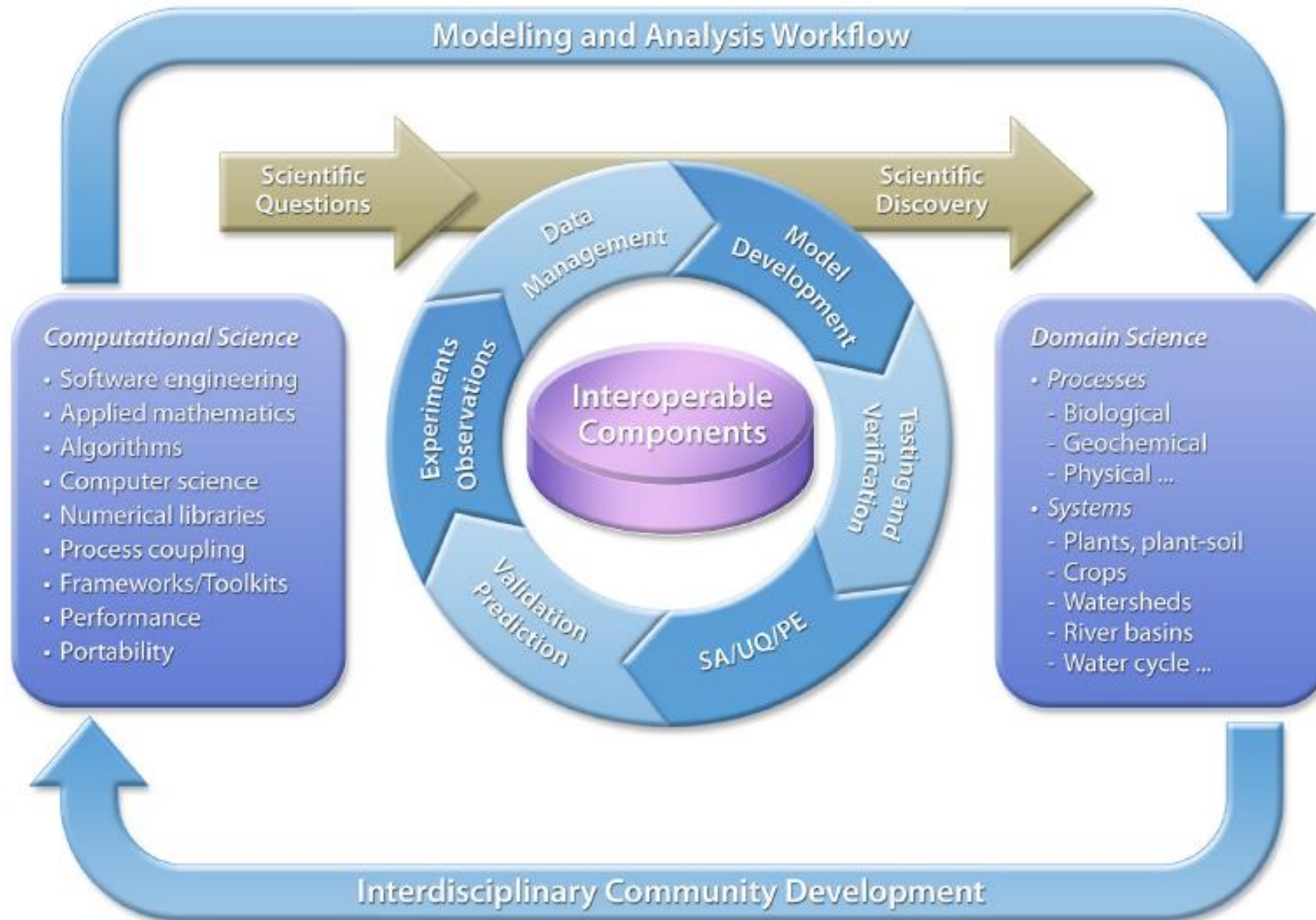
OPPORTUNITIES: DANUBE GREEN CORRIDOR



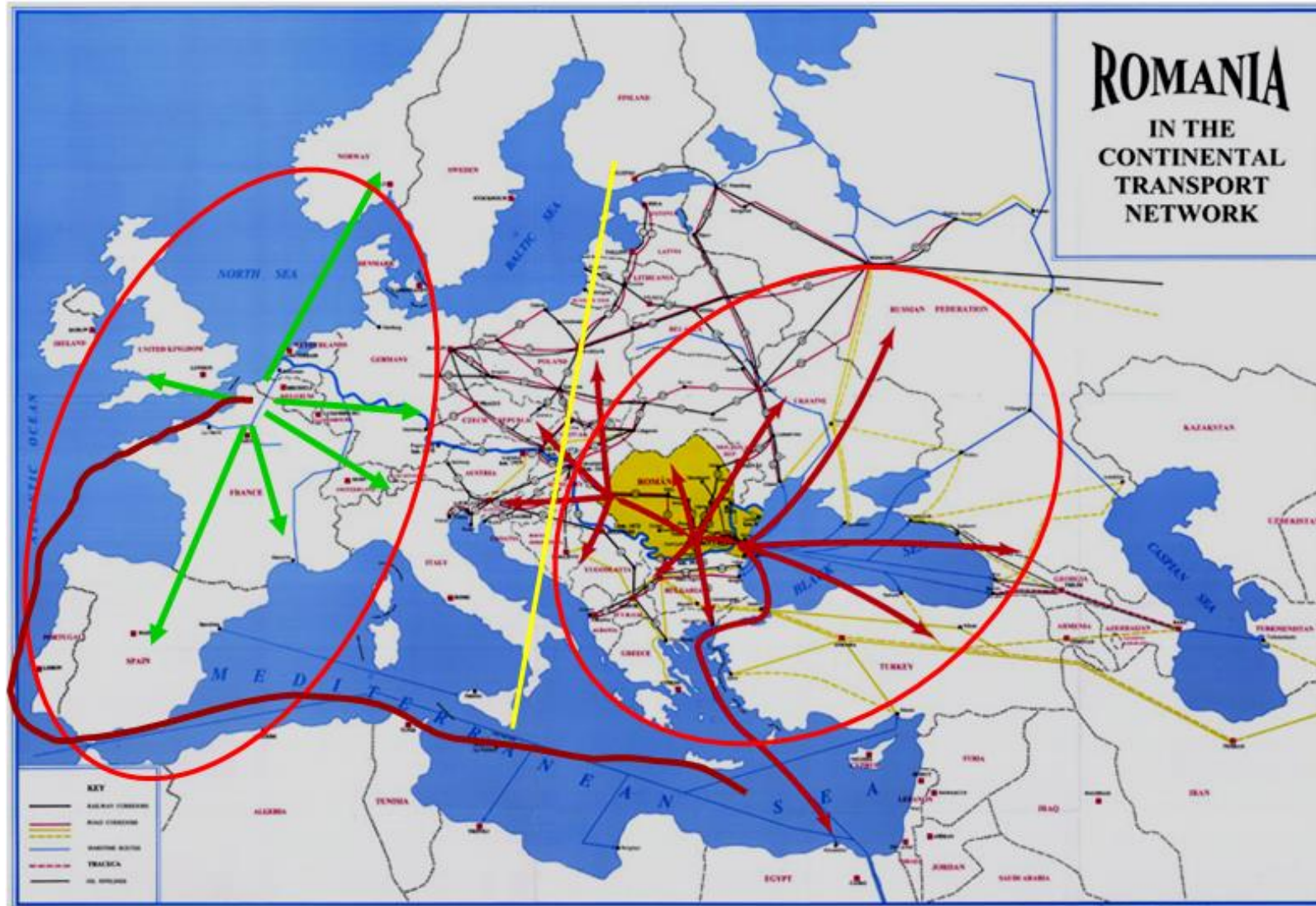
Challenges: Climate Change



Science centered growth



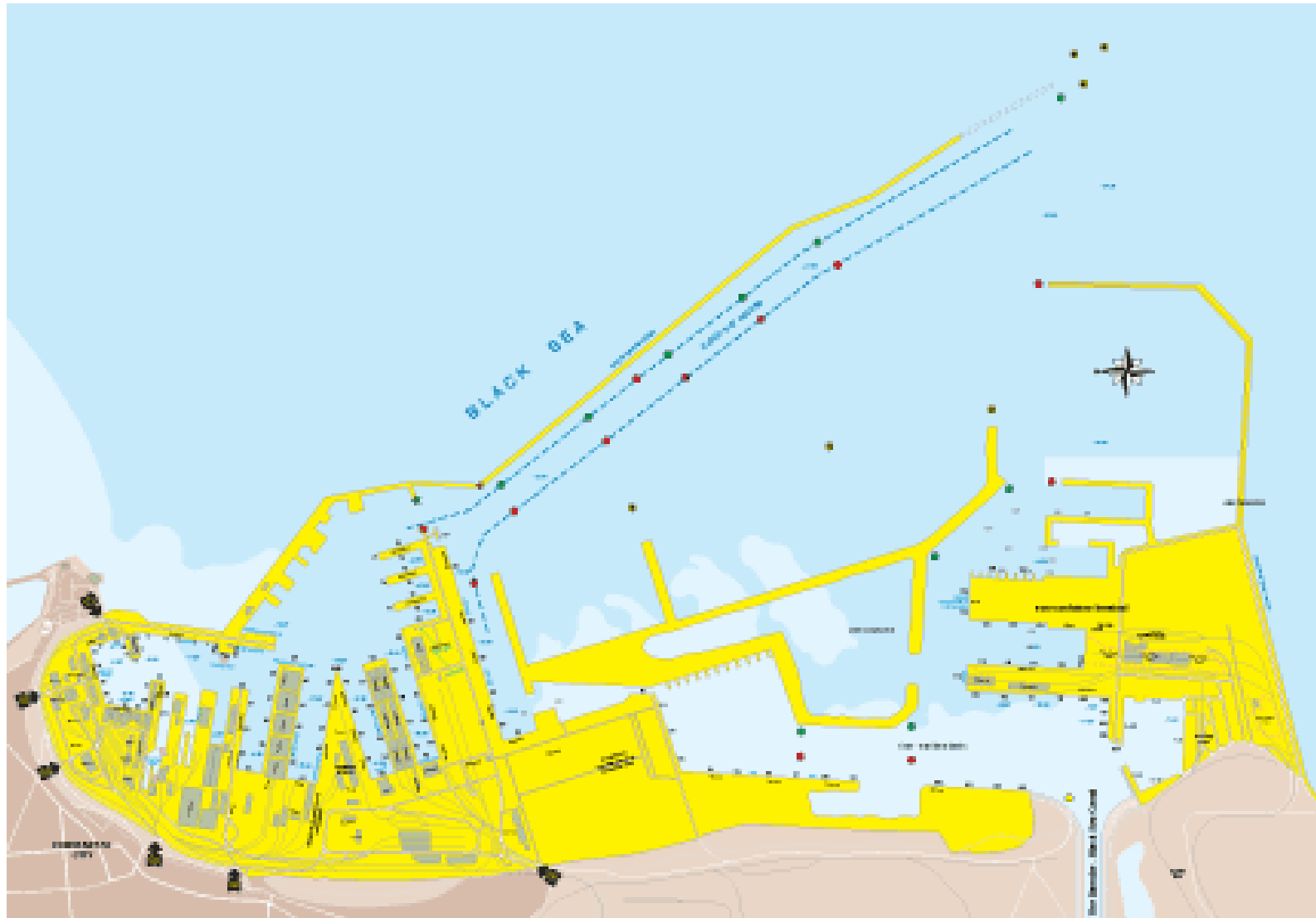
Constanta and the EU



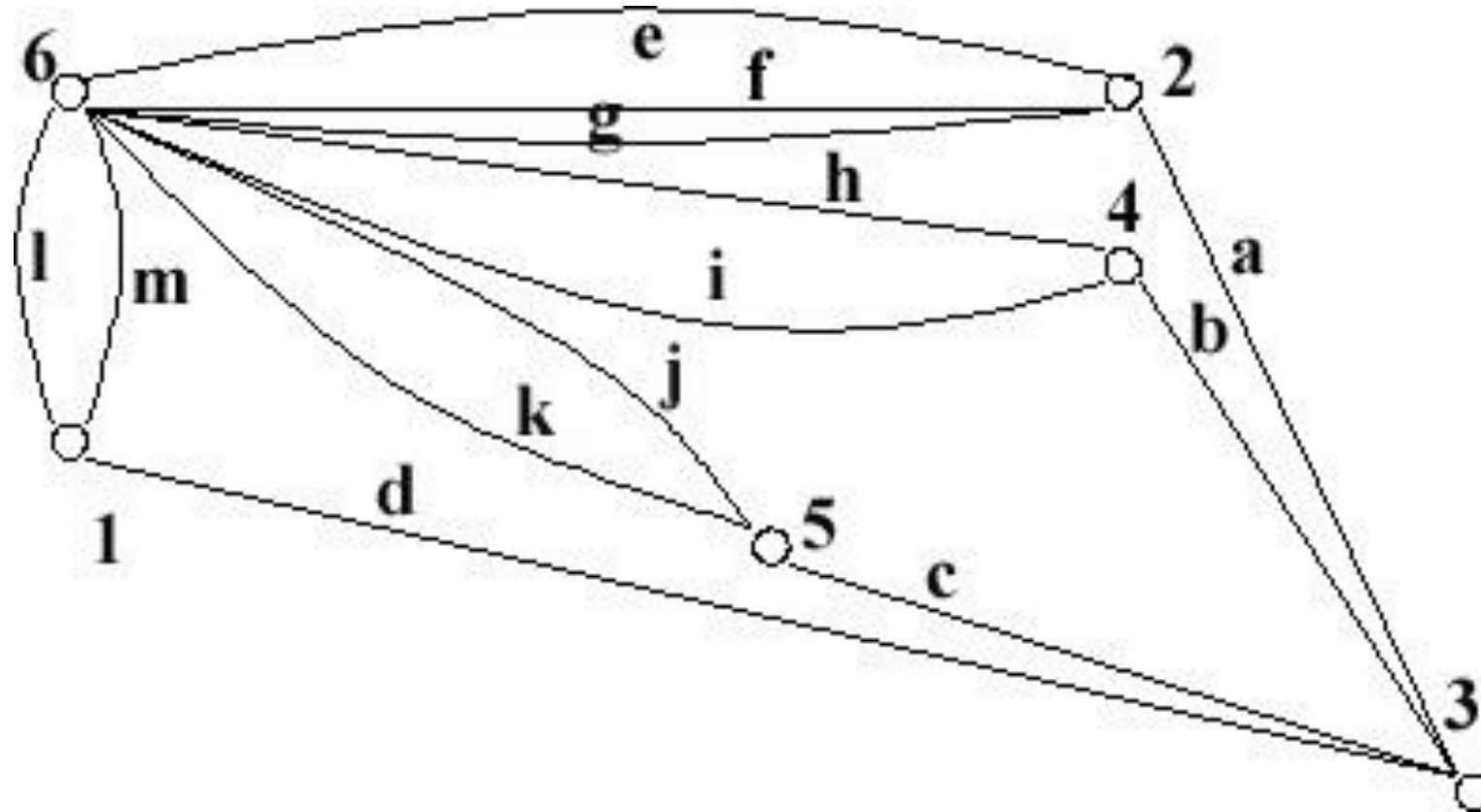
CONSTANTA PORT: LOCATION



CONSTANTA PORT: Infrastructure



CONSTANTA PORT: Competitive Advantages

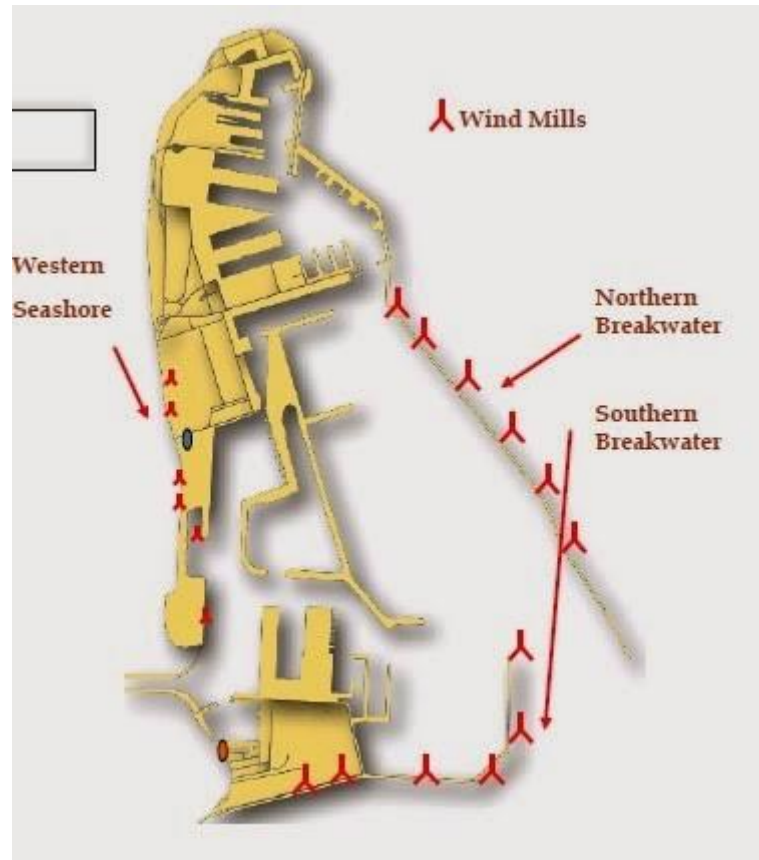


Comparison of the competitive advantages of the Constanta Port, Trieste, Piraeus and Varna

CONSTANTA PORT and the City



GREEN PORT



Τα Πάντα ῥεῖ (ta panta rhei) - Simplicius of Cilicia
Omnia mutantur, nihil interit – Publius Ovidius Naso

The CONSTRUCTAL Theory – Adrian Bejan

"For a finite-size system to persist in time (to live), it must evolve in such a way that it provides easier access to the imposed currents that flow through it."

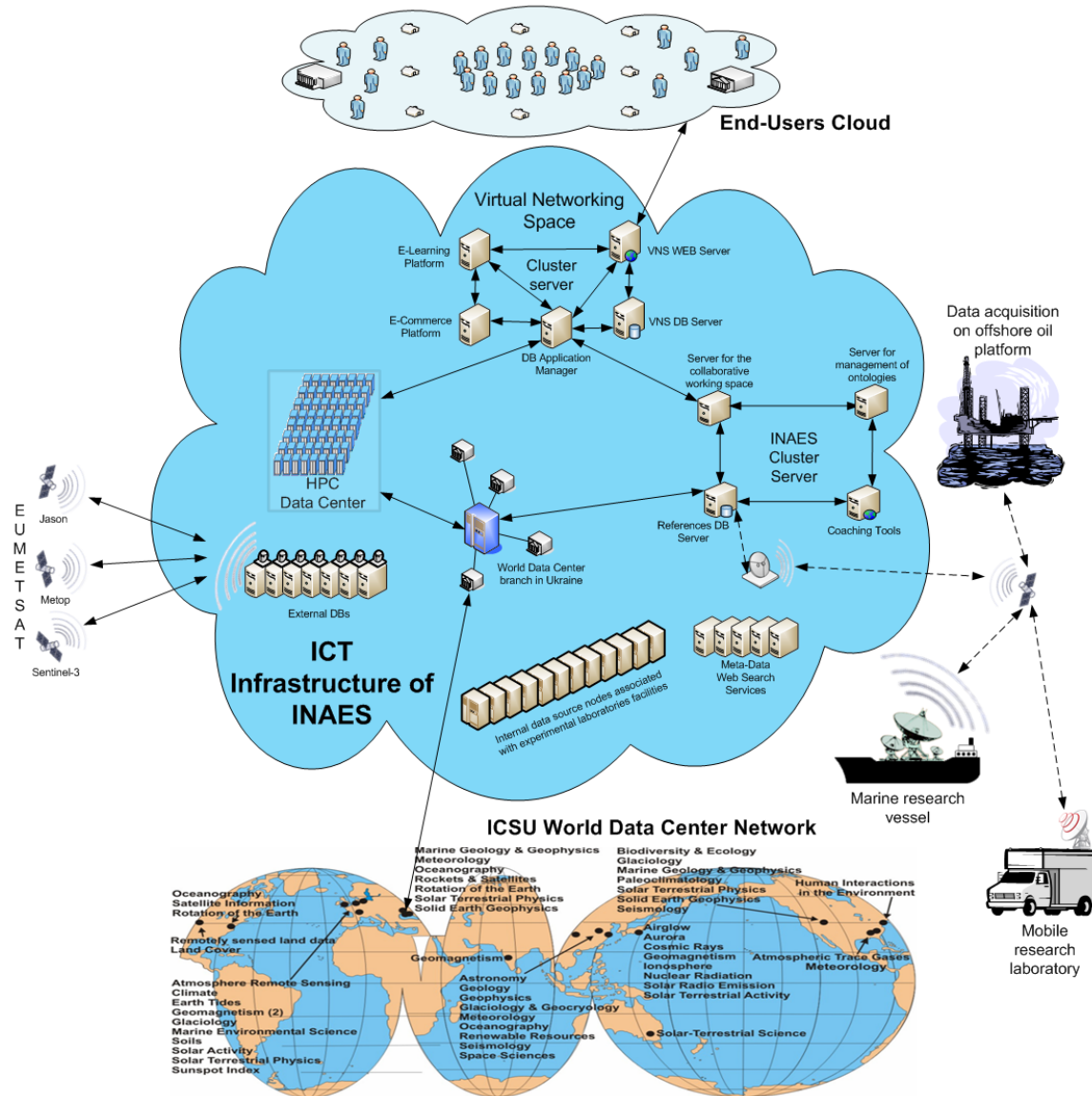
Adrian Bejan, 1996

The constructal law was proposed in 1996 as a summary of all design generation and evolution phenomena in nature.

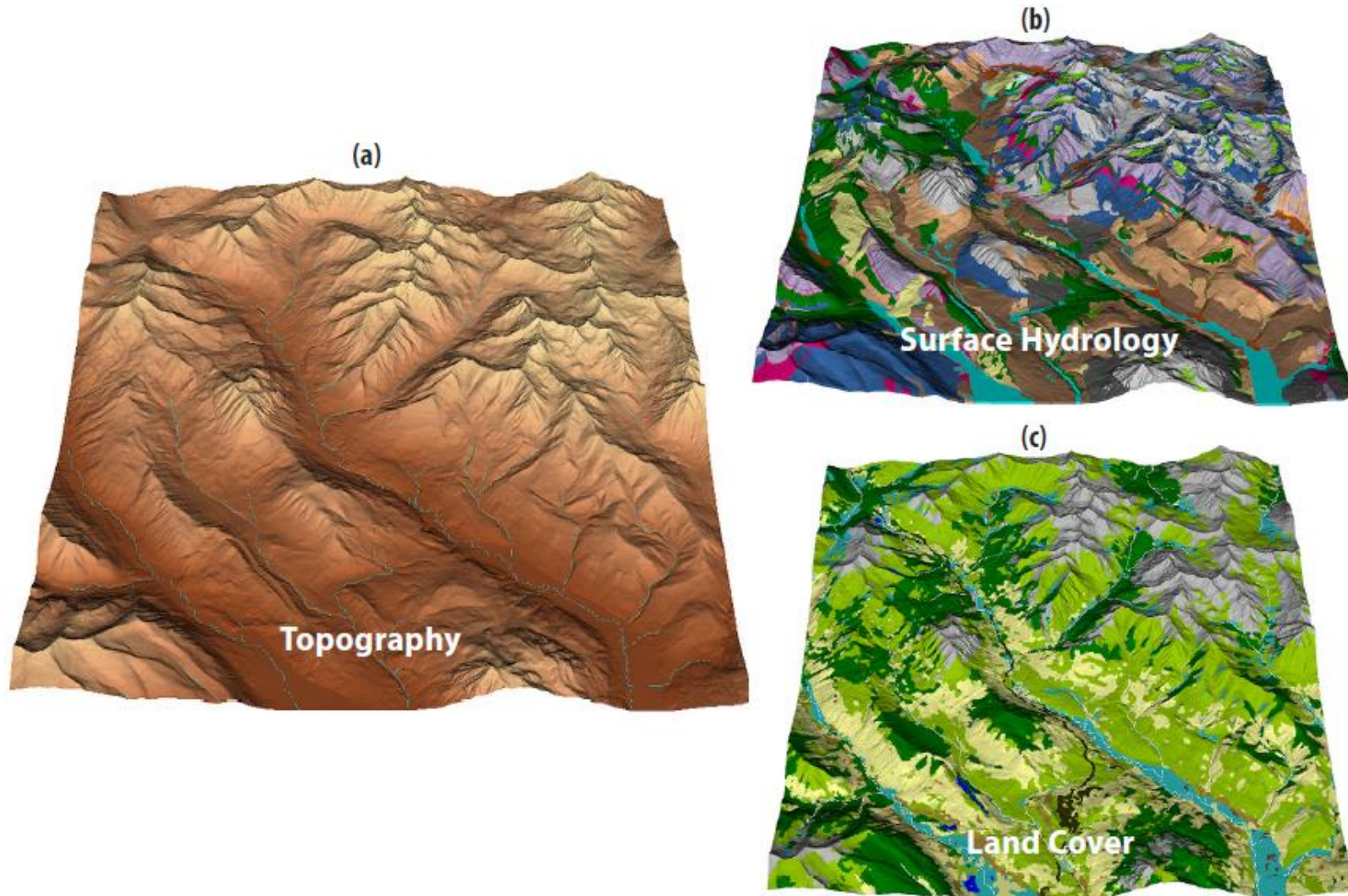
"Constructal" is a word coined by Adrian Bejan, coming from the Latin verb construere, to construct, in order to designate the natural tendency of flow system (rivers, trees and branches, lungs and also the engineered forms) to morph in a constructal evolutionary process toward greater and greater flow access in time.



INTEGRATED DIGITAL PLATFORM



Modeling & Ecosystem Service



Dobrogea Blue Bay Living Lab

Definition of a large scale Living lab called Dobrogea Blue Bay covering a region located between the Danube and the Black Sea centered on the Danube - Black Sea Canal and to develop a multilevel strategy to implementing Innovation actions dedicated to a holistic approach for water, energy, transport and hydrogen-based regional development





Strategic Projects

- Biomass processing technologies based on pyrolysis
- Green energy solutions based on the processing MSW
- Localised loops of circular economy
- Soil remediation based on biochar produced from agro waste
- Integration of waste heat stream and RES in District Heating Networks



Hydrogen Technology Projects

- Industrial use of renewable hydrogen in Oil Refineries
- Balancing renewable energy plants
- Terminal in the Port of Constanta for Importing of hydrogen from RES
- Injection of Hydrogen in NG pipelines
- Manufacturing plants for hydrogen fueled powertrains



Thank you for your attention!

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