



ALICE:

Improving biophysical models to link terrestrial, riverine and coastal interfaces accounting for biodiversity and ES

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ALICE TEAM

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ESP SAN SEBASTIÁN, SPAIN
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KEY OBJECTIVES

- ✓ Develop a full-package of **new methods, tools and procedures to assist with coastal and inland landscape management**
- ✓ **Targeting and stimulating BGI investment within the 4 CS by quantifying the benefits for ES including biodiversity conservation**
- ✓ **Identify solutions for the economic and social barriers, which may limit investment in BGI in each of the 4 CS**
- ✓ Provide with **stronger scientific and socioeconomic support** for the **effective implementation of future BGI and environmental policy.**

France, Couesnon River



Ireland/UK, Carlingford Lough



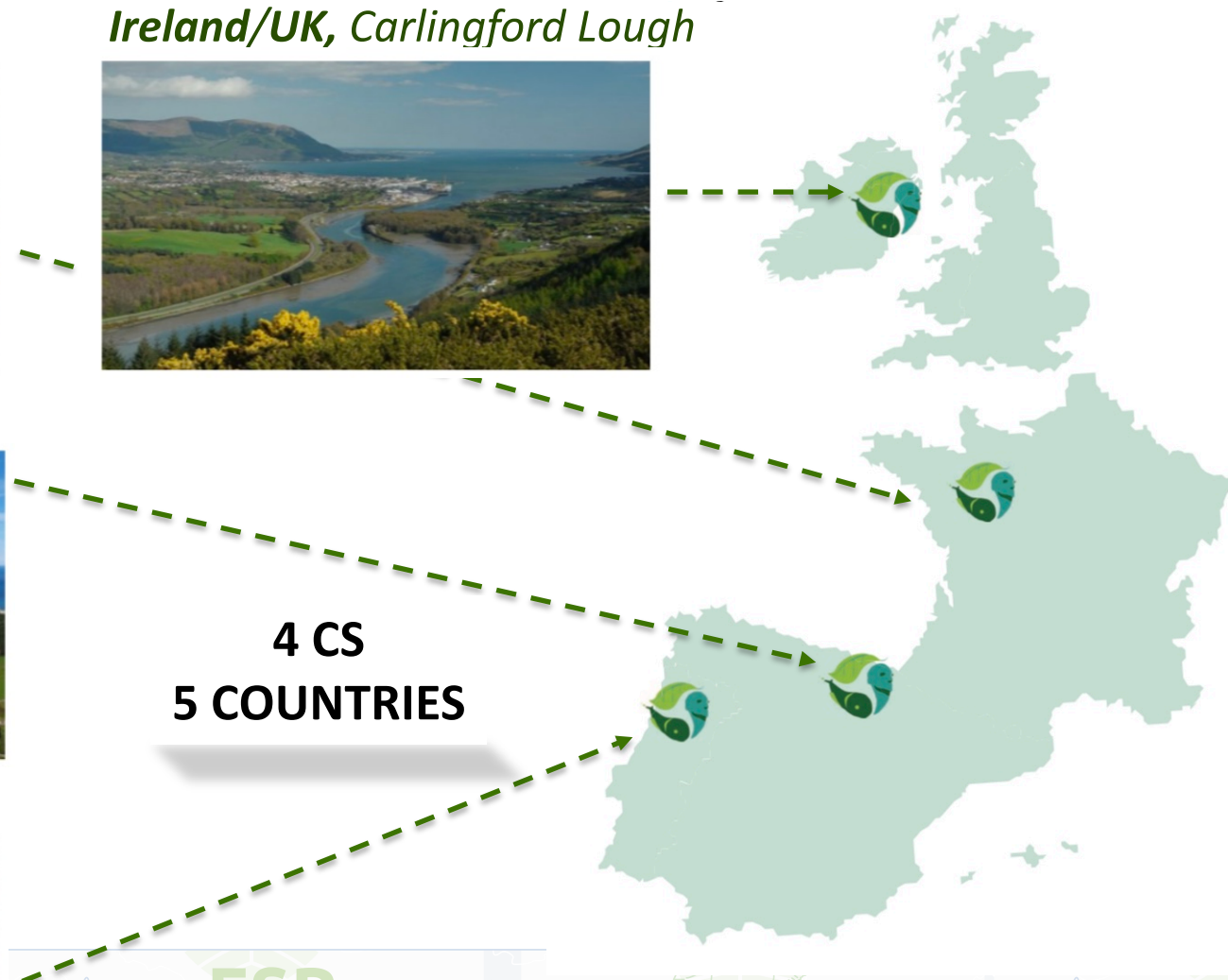
Spain, Pas, Miera and Asón

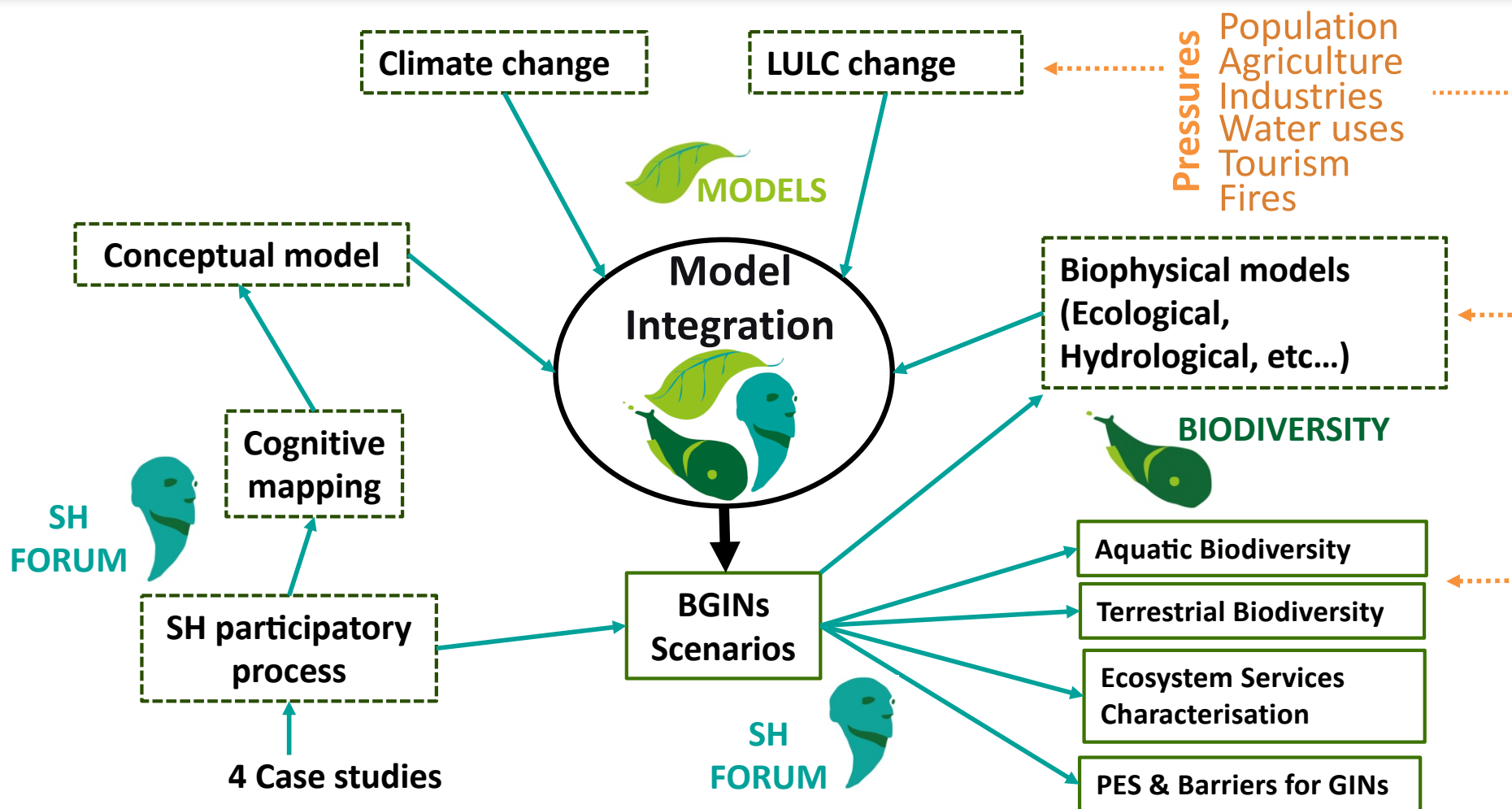


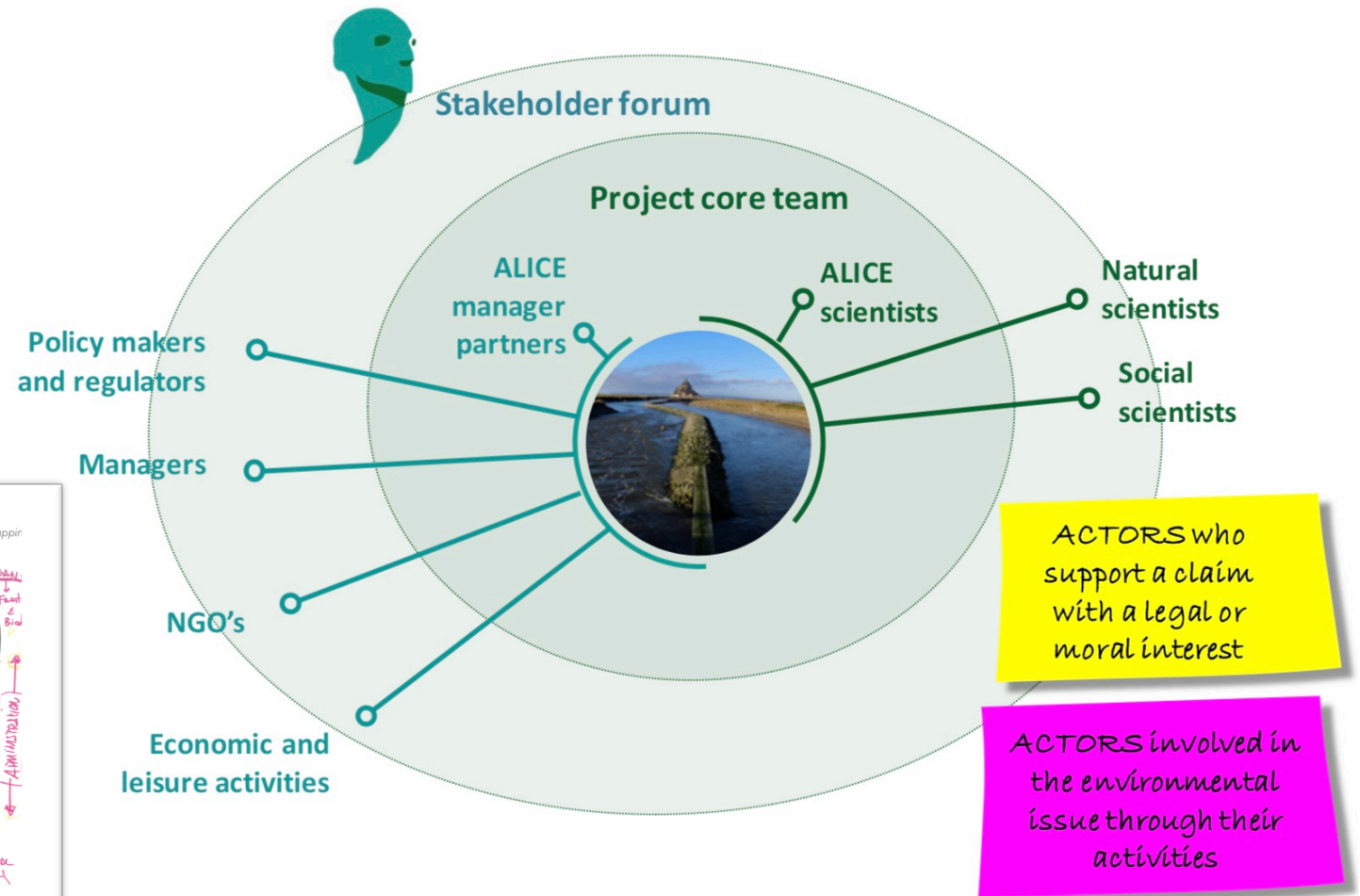
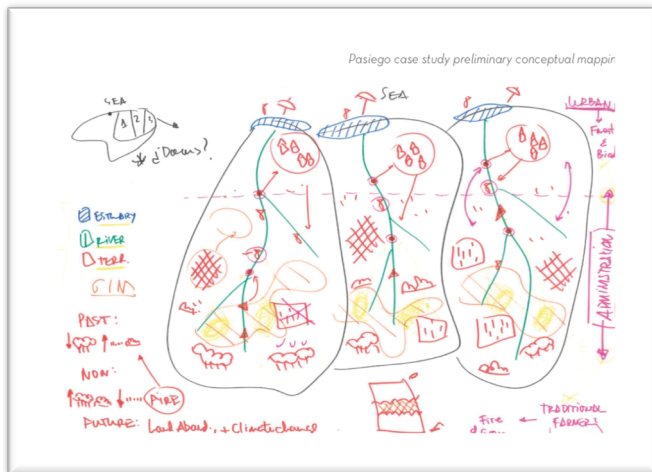
Portugal, Paiva



4 CS
5 COUNTRIES



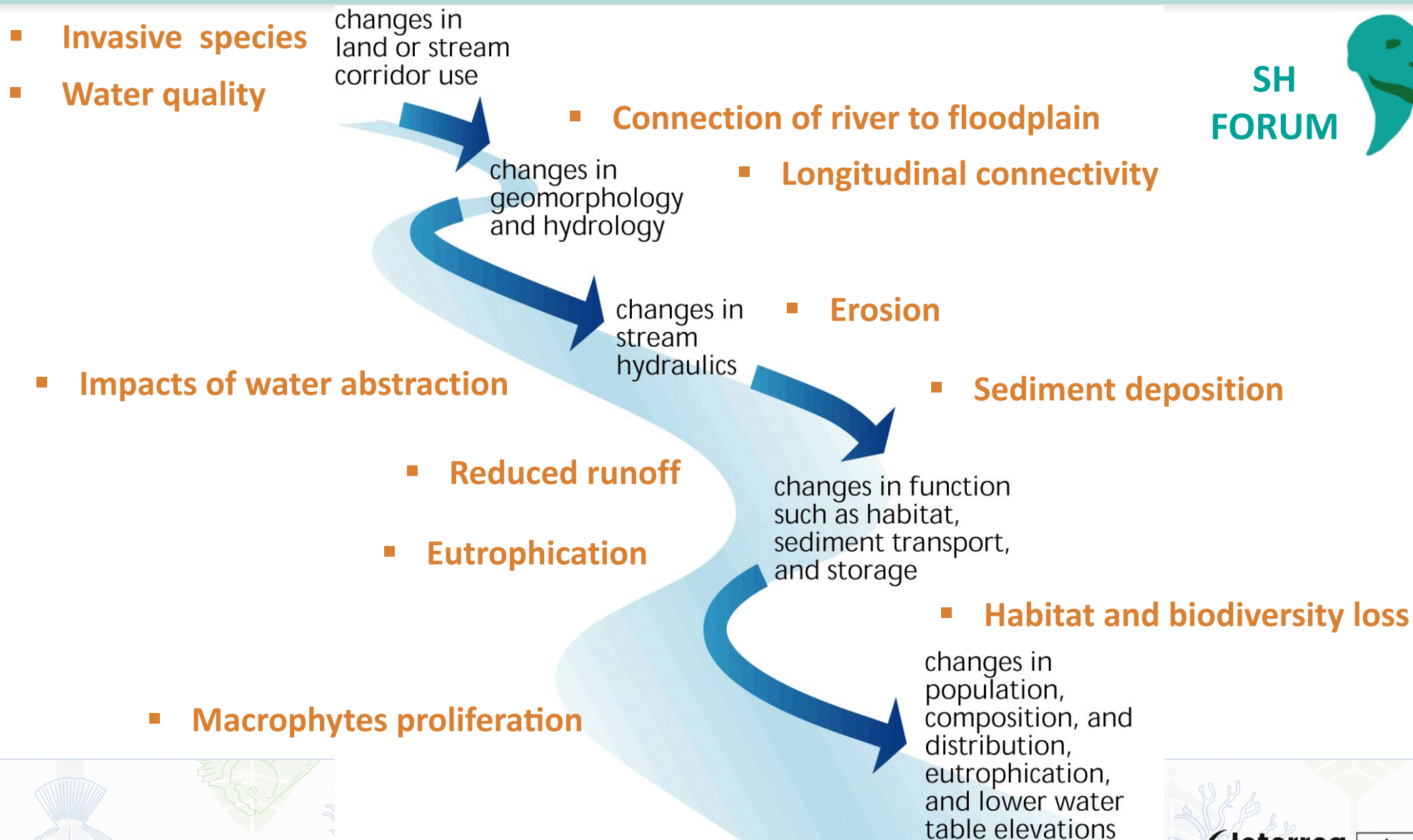


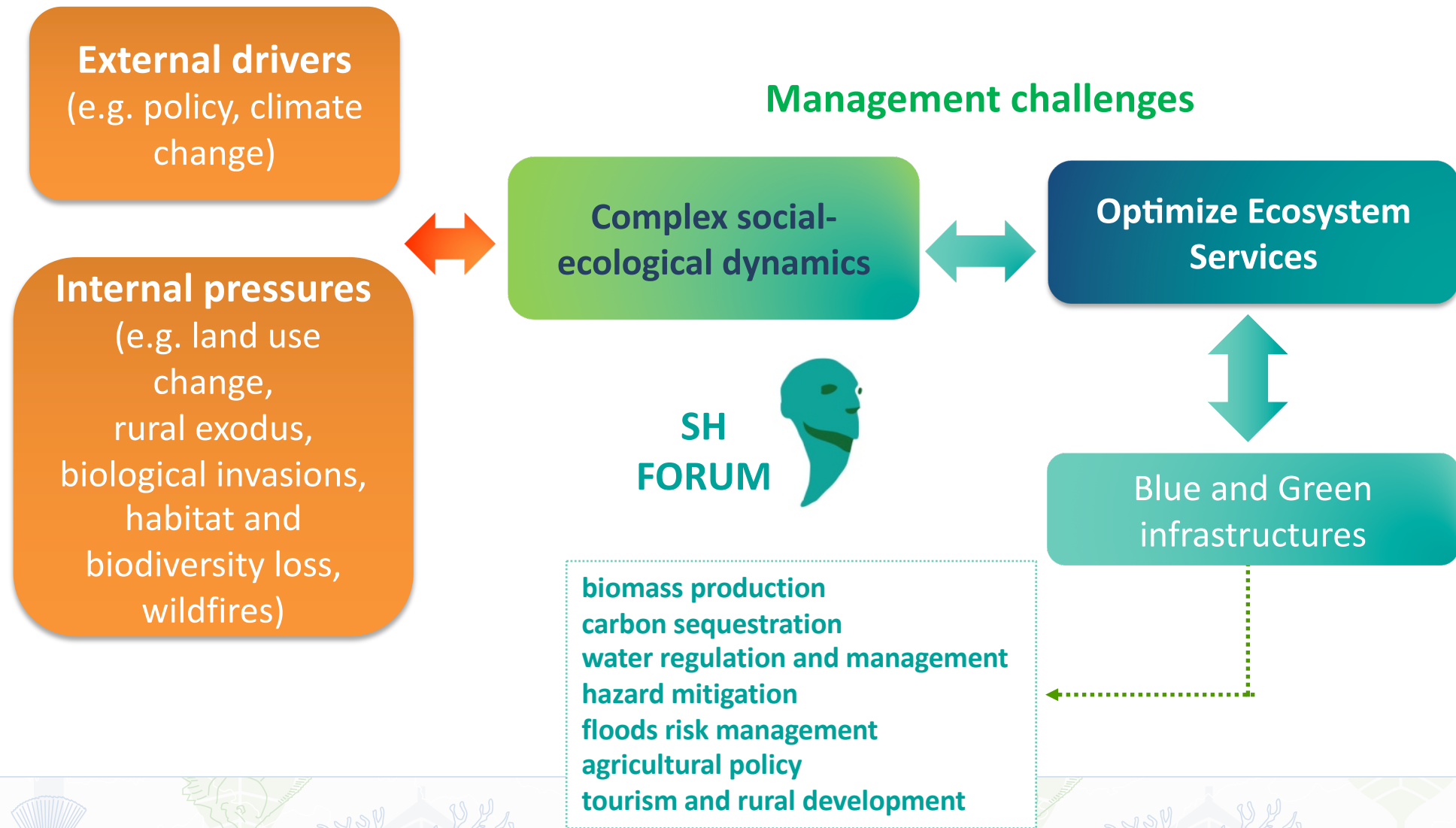




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ENVIRONMENTAL ISSUES IN THE CS

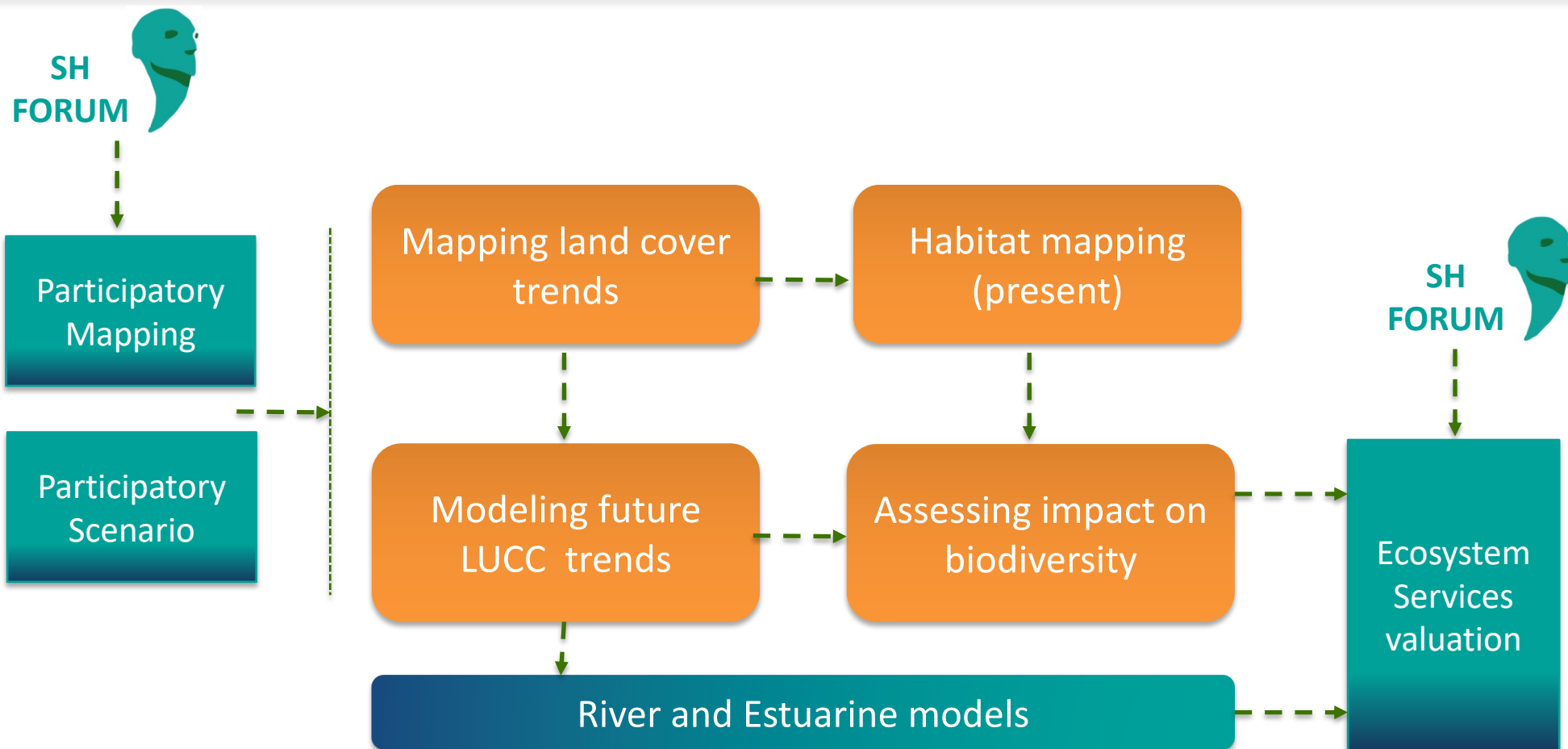






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INTEGRATED MODELING



Ecosystem Services Characterisation

Terrestrial Ecosystem

1. Meat production
2. Milk production
3. Forestry products
4. Carbon uptake
5. Erosion Control
6. Recreation / Tourism
7. Amount of water

River Ecosystem

8. Water Quality
9. Fisheries
10. Recreation / Tourism
11. Water purification
12. Flood protection

Estuarine Ecosystem

13. Water Quality
14. Fisheries
15. Recreation / Tourism

Biodiversity / Conservation Diagnosis

16. Terrestrial Biodiversity

17. Freshwater Biodiversity

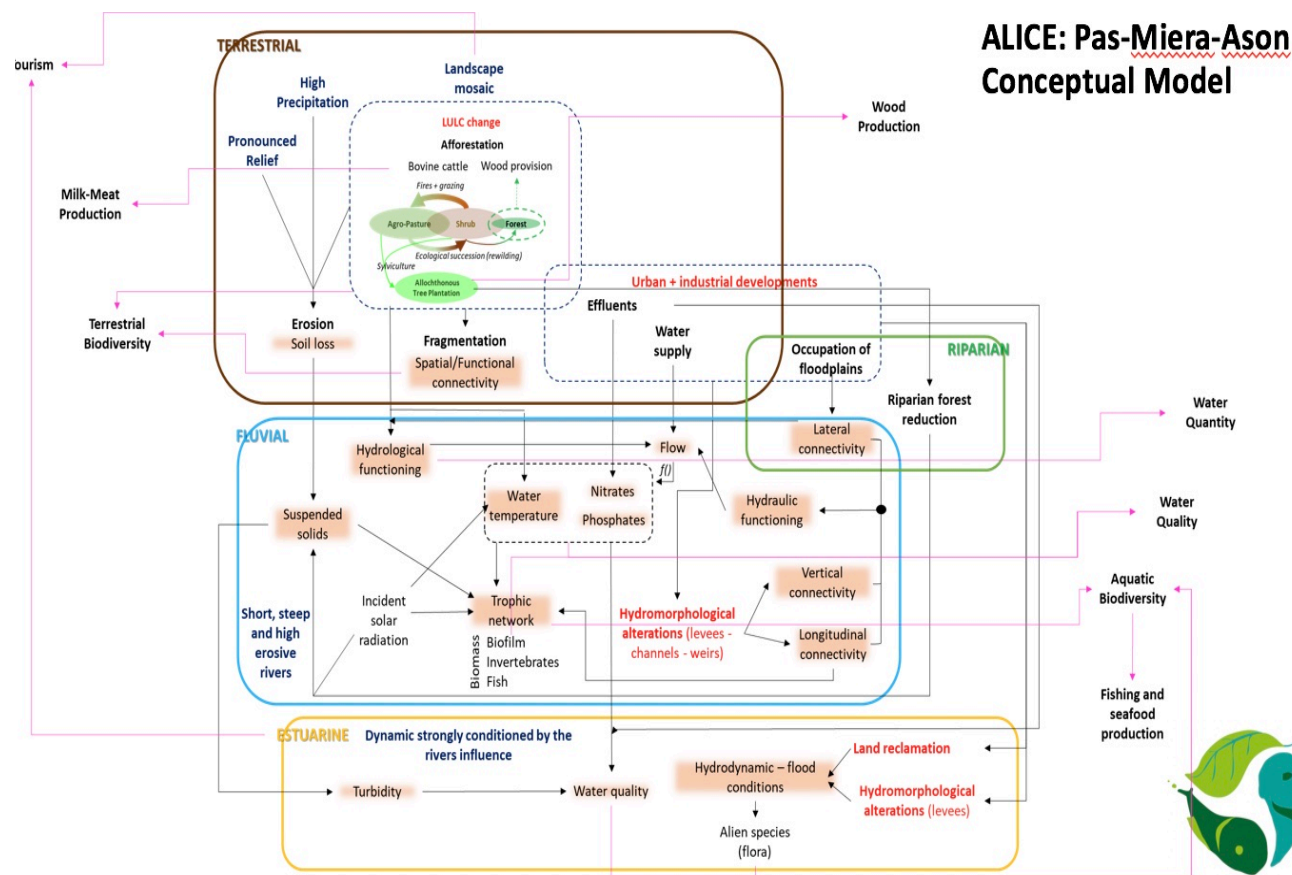
18. Estuarine Biodiversity

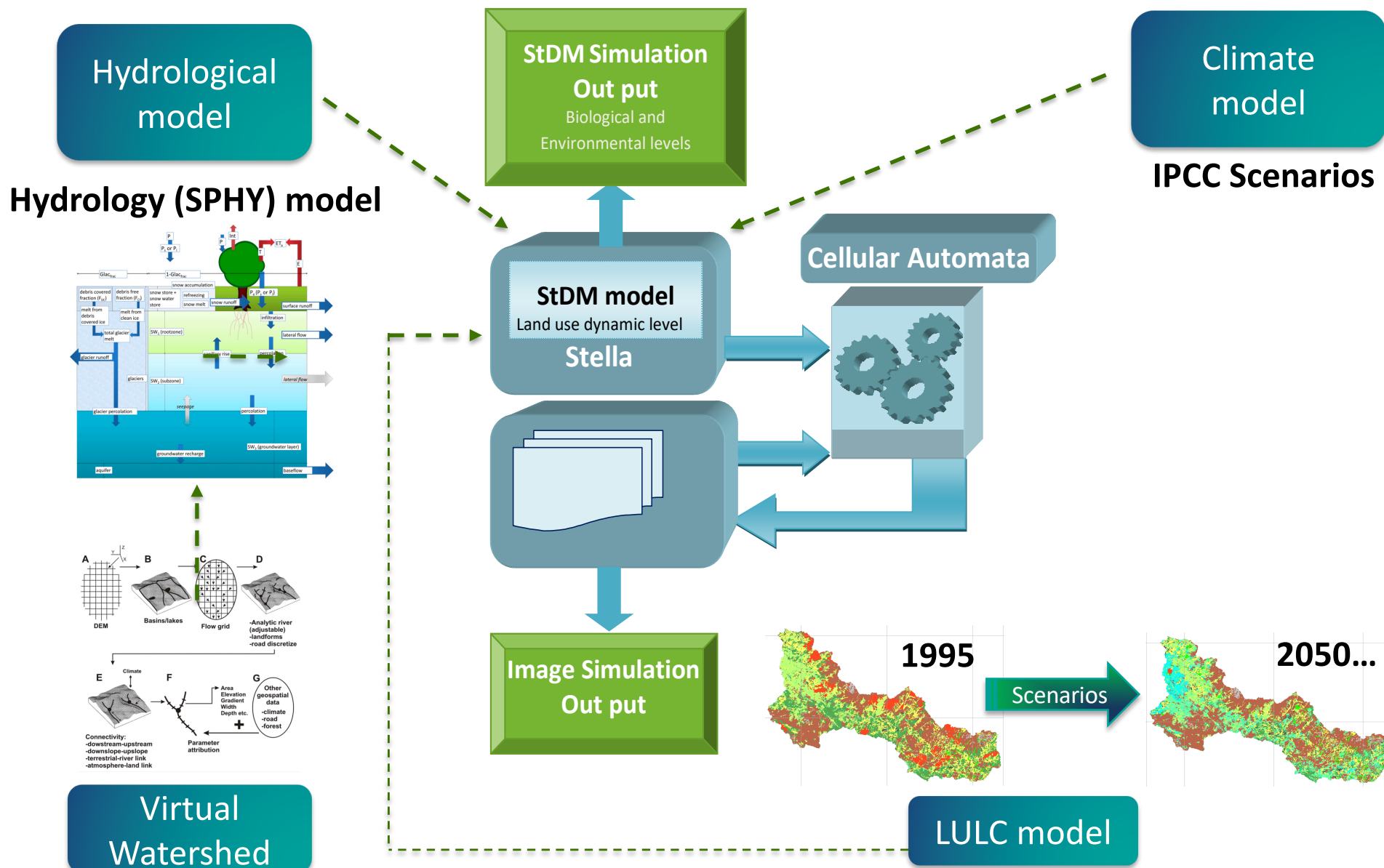
19. Heritage

20. Habitat Conservation Status

21. River Ecological Status

22. Estuarine Ecological Status



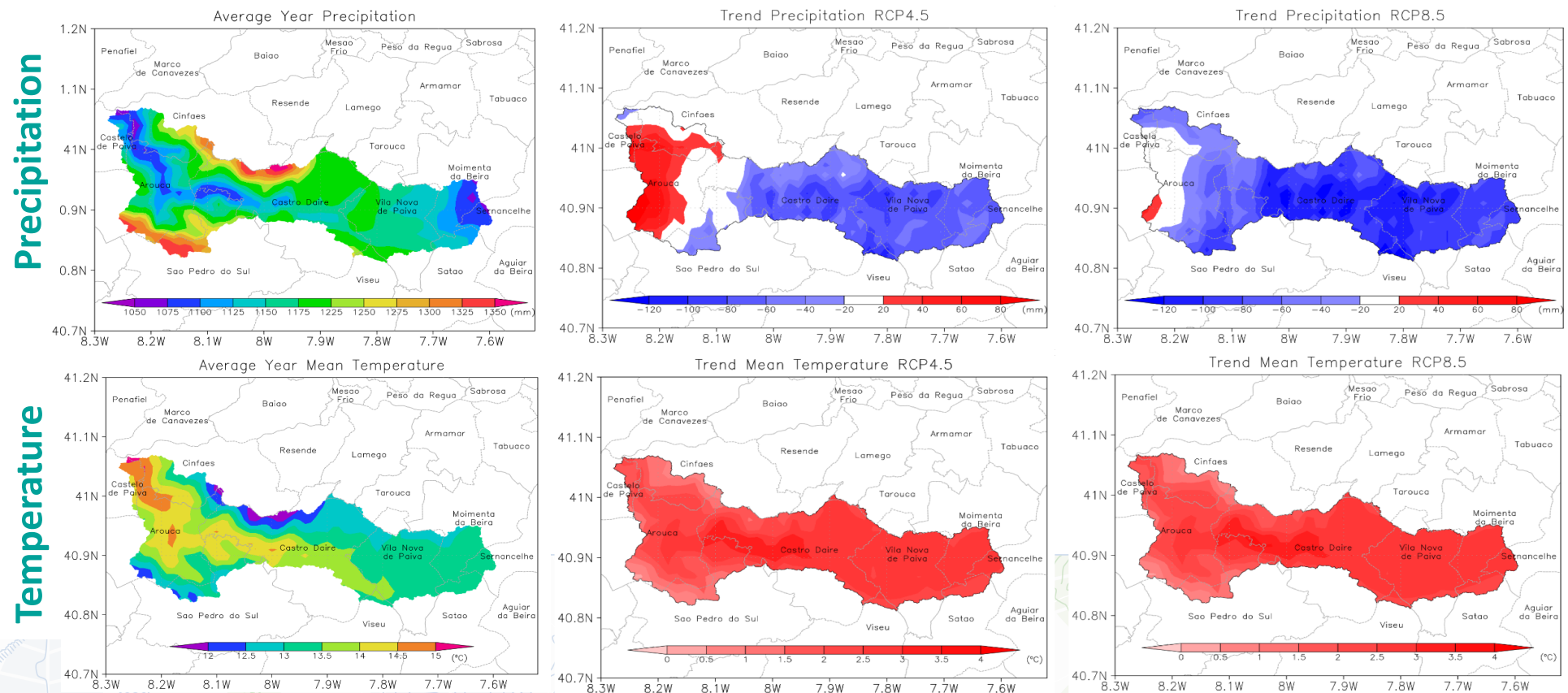


EURO-CORDEX ensemble simulations

- ✓ Regional climate models (RCMs) were coupled with global climate models (GCM), allowing a significant reduction of scale and an increase in spatial resolution.
- ✓ Complementary scaling methodologies were applied, allowing the increase of the spatial resolution of ~ 12 km to ~ 1 km in all variables.

IPCC Scenario 4.5

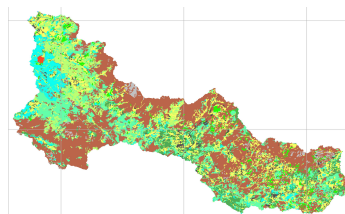
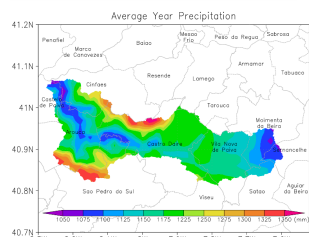
IPCC Scenario 8.5



Climate
projections

+

LULC model



Terrestrial, River and Estuarine models

- Hydrological models
- Flood models
- Water temperature
- Nutrients (NO_3^4 , PO_4^3)
- Suspended solids
- DOM
- Ecological status

Selected BGINs, Scenarios
& Case Studies

Ecosystem Service Valuation
and analysis of trade-offs

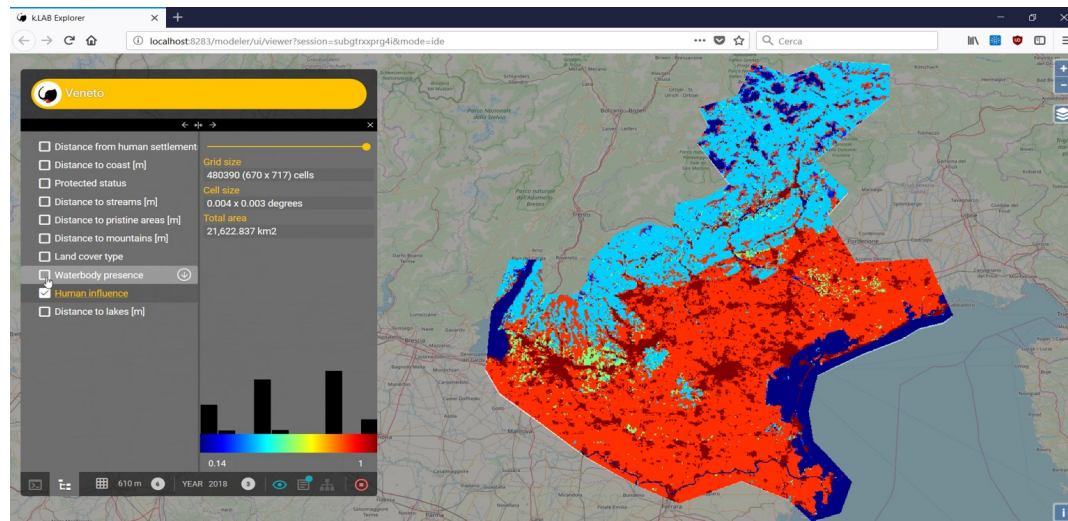
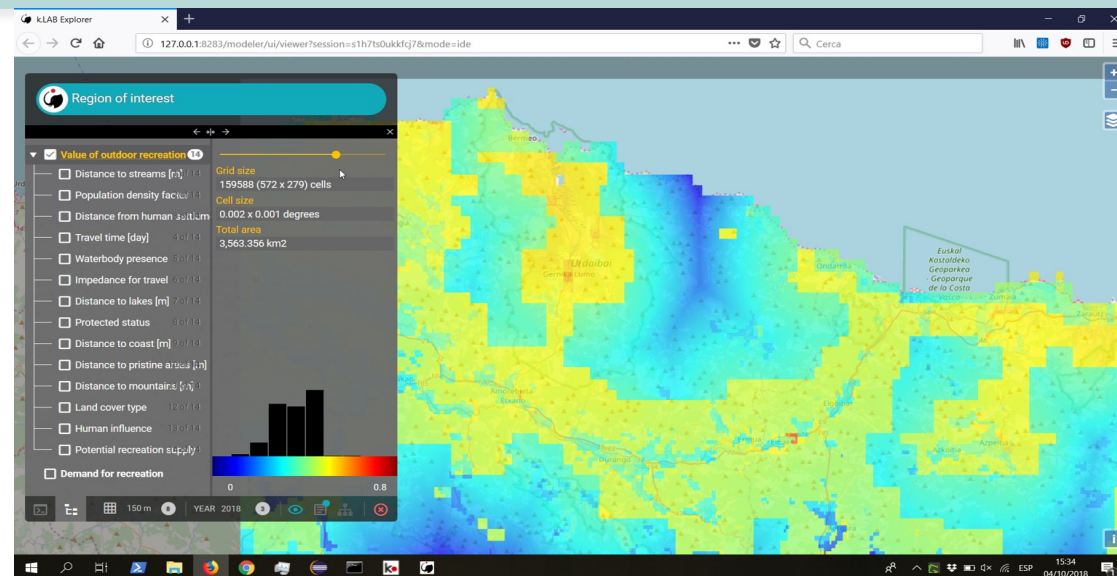
Stakeholder
Participation
process

kOLAB
knowledge modelling environment

Establishment of schemes for payment of ES and biodiversity conservation

An adaptive modeling technology

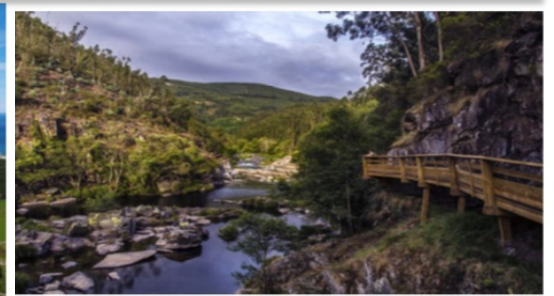
Enables new levels
of modularity and interoperability
between independently developed
data and models.



Values of outdoor recreation

Human influence

ALICE will incorporate socioeconomic and climate change scenarios, to illustrate how **biodiversity** characterization, **ES valuation** and **stakeholder engagement** can contribute to a **framework of sustainable use of natural resources**.





Thank you!!



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<http://project-alice.com>



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