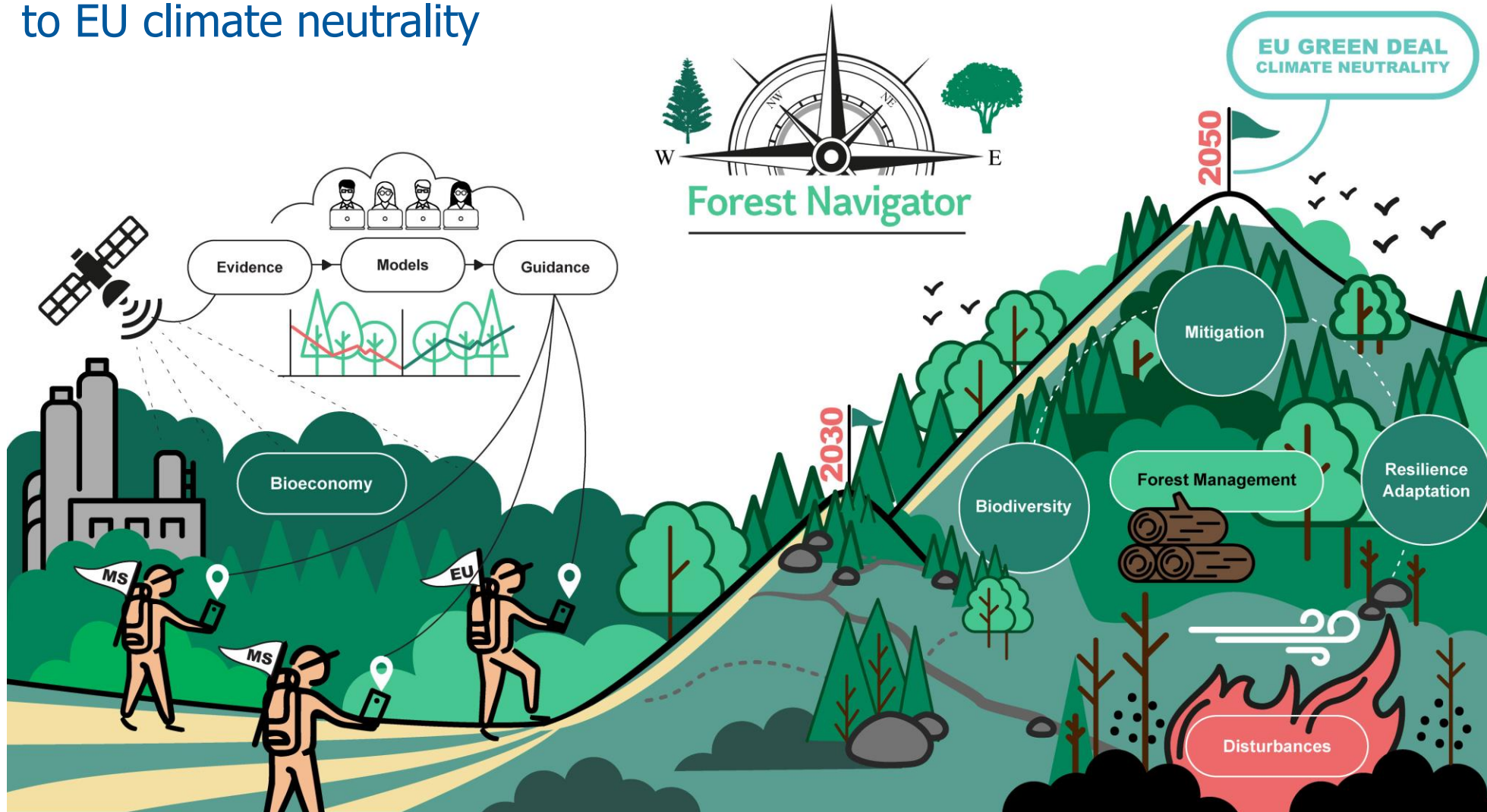


ForestNavigator

Navigating European forests and forest bioeconomy sustainably to EU climate neutrality



Fulvio Di Fulvio
Petr Havlik

Horizon Europe



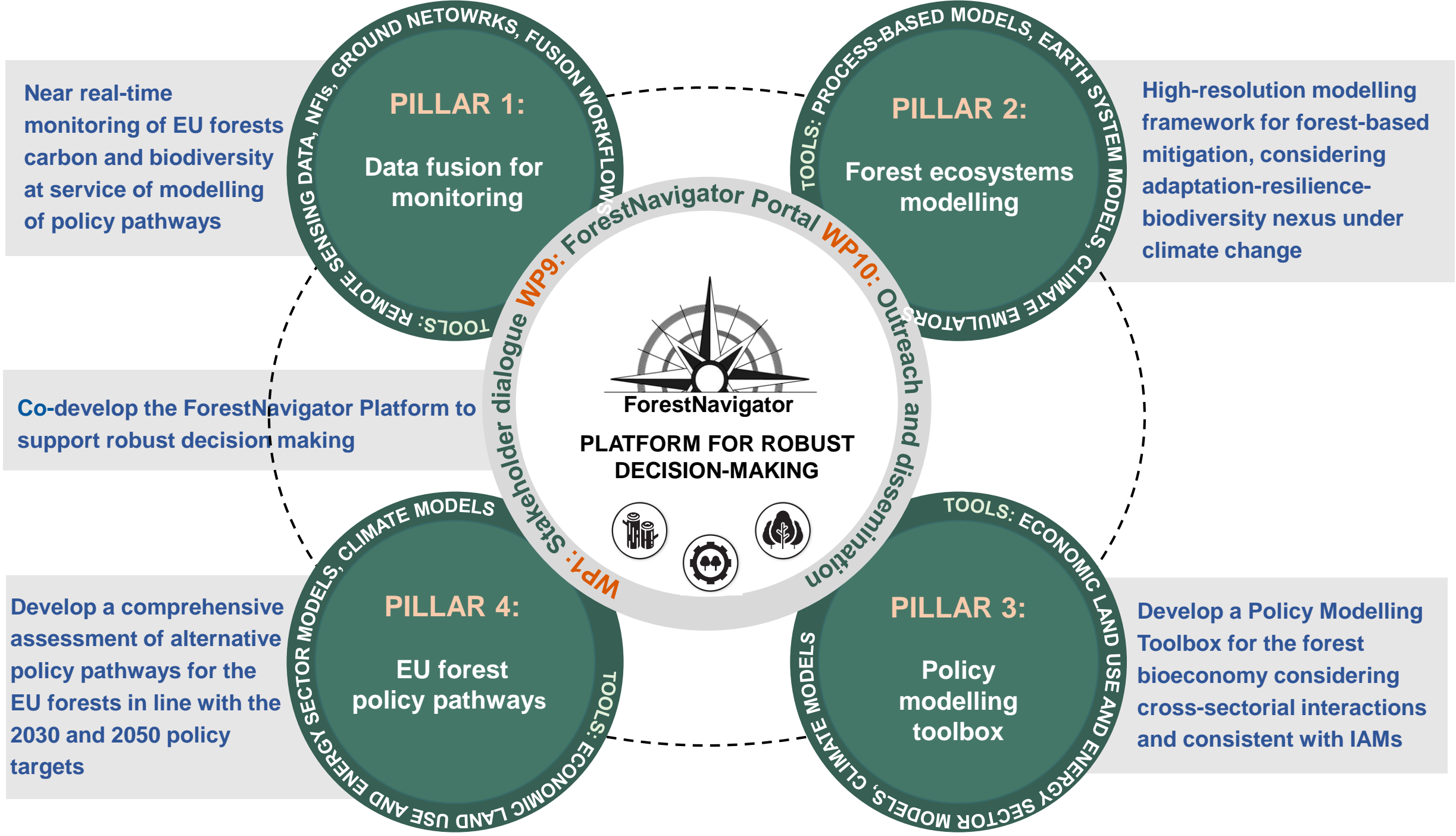
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Main Research Questions

- ▶ **How does alternatively sequestering carbon in forests, HWP, and substitution in the energy sector and materials allow to reach EU mitigation targets?**
- ▶ **What will be the impact of climate change incl. natural disturbances on the permanence of forest carbon stocks and the sink capacity?**
- ▶ **What are the synergies between biodiversity conservation and carbon sequestration in the EU forests?**
- ▶ **How does the relevance of mitigation and adaptation options vary across the EU MSs?**
- ▶ **What are the short-term vs. long term options for enhancing adaptation and mitigation?**
- ▶ **How do mitigation efforts in rest of the World affect the EU mitigation potentials?**



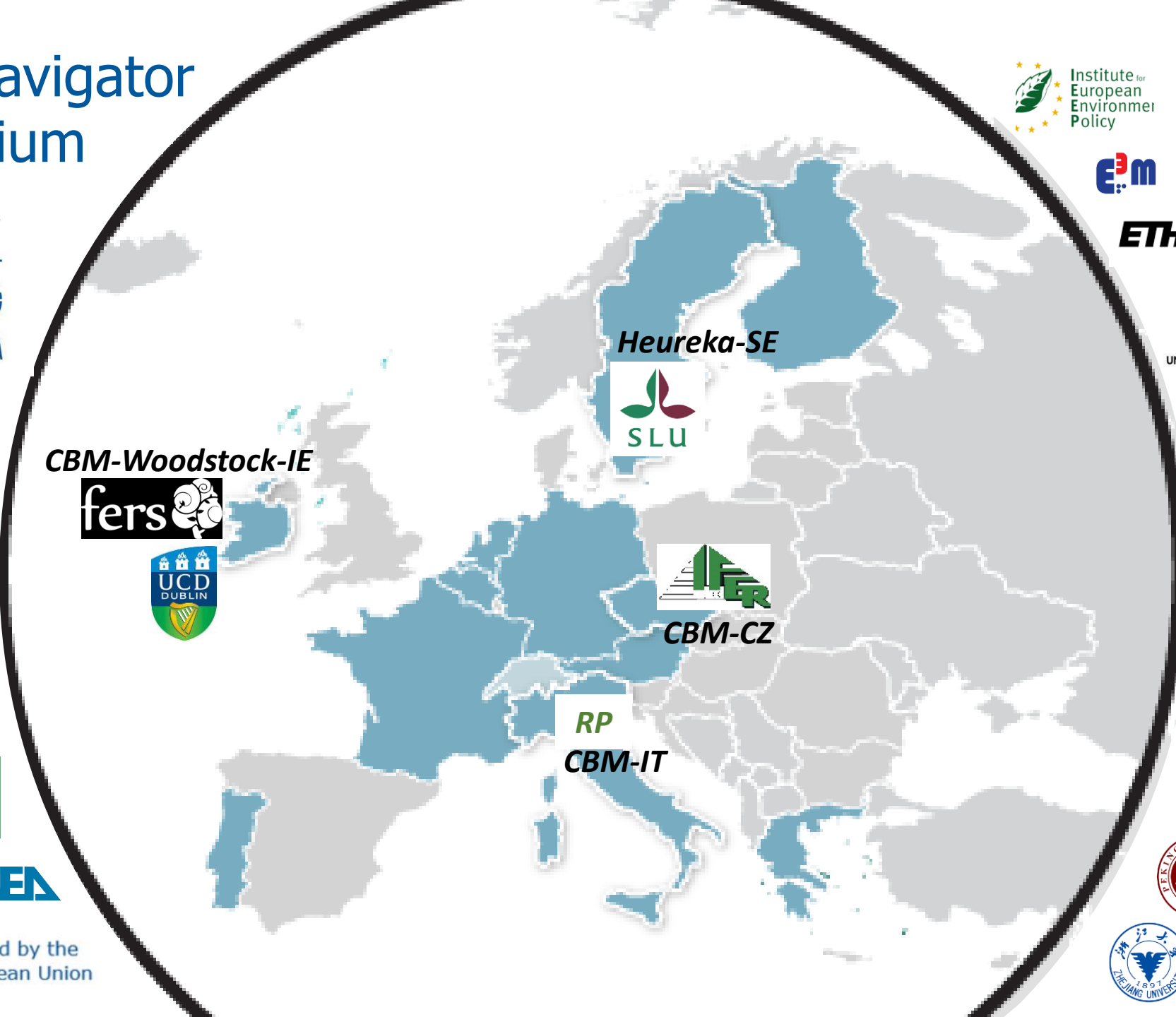


ForestNavigator Consortium

24 Partners



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Analytical Modelling framework

1. Multi-scale Forest Modelling

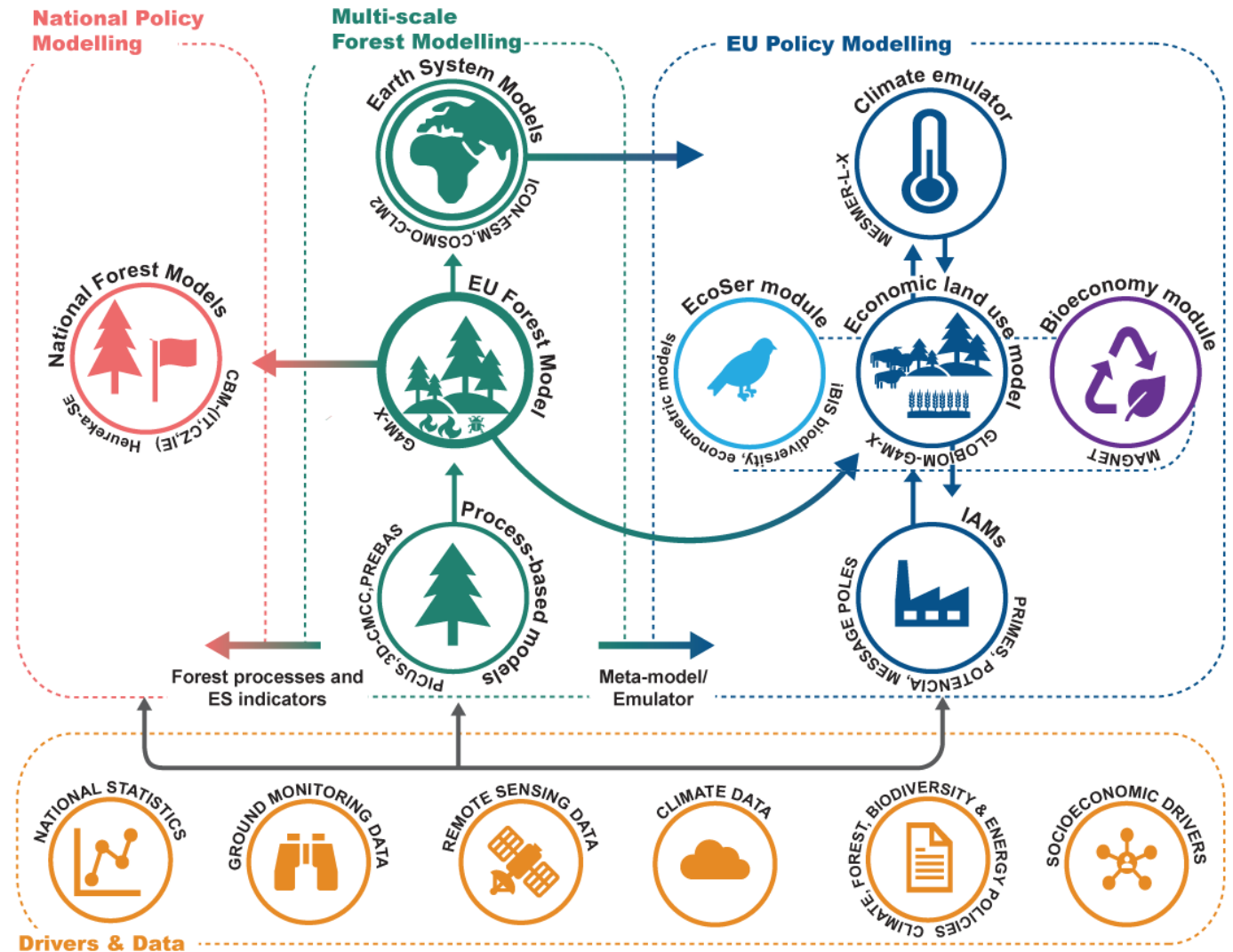
- Coupling detailed process-based models (G4M), Earth System Models (ICON-ESM, COSMO-CLM2) and disturbance models (FLAM, PICUS), and create the meta-models G4M-X and MESMER-L-X for dynamically assessing biophysical forest potentials under CC and iteratively considering the climate feedbacks.

2. EU Policy Modelling

- Coupling GLOBIOM-G4M-X with the climate emulator (MESMER-X), bioeconomy models (MAGNET), ecosystem service models (iBIS) and IAMs to define robust policy pathways able of accounting for cross-sectorial dynamics.

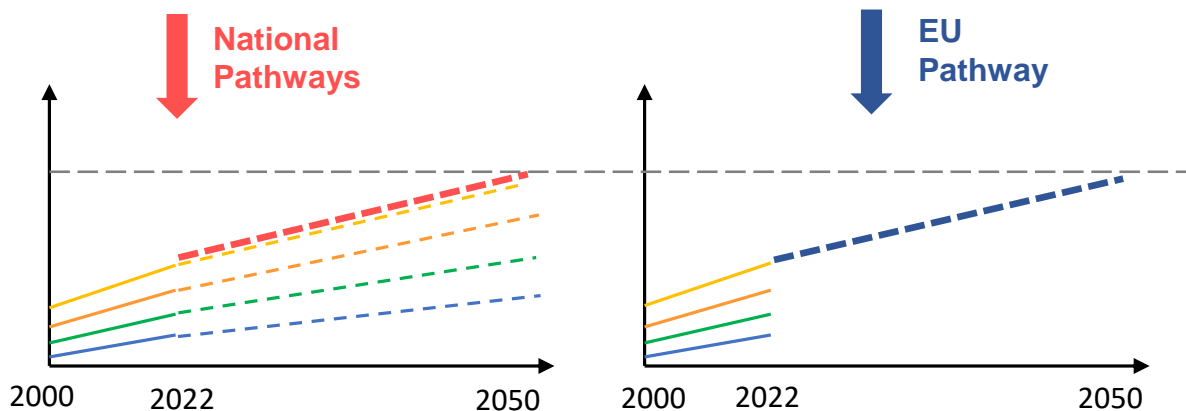
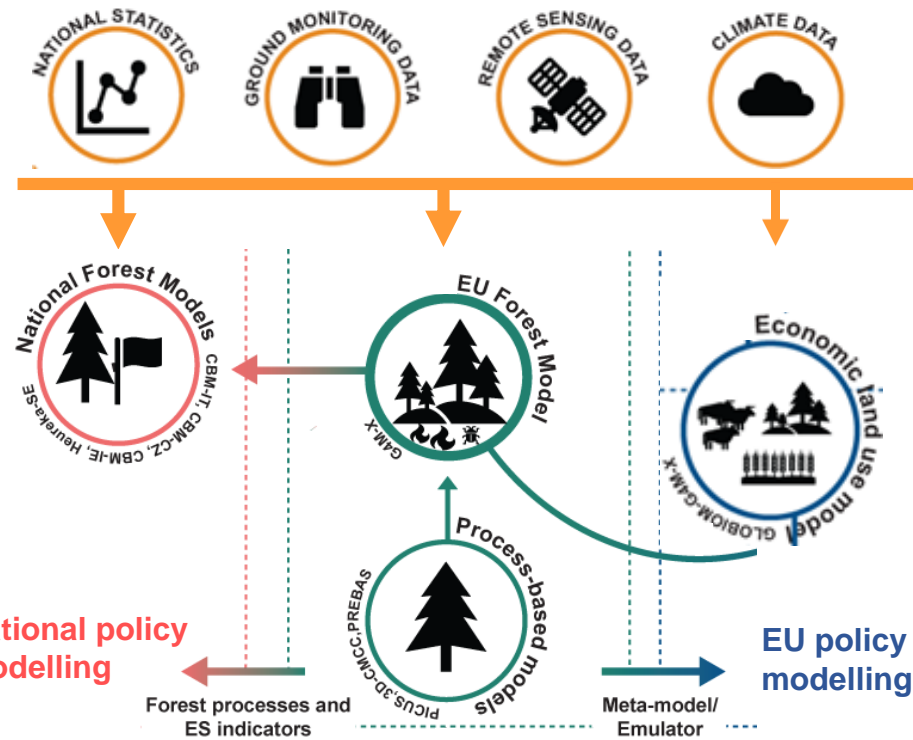
3. National Policy Modelling

- Improve biophysical forest representation under CC in national forest models (CBMs, HEUREKA) for contrasting national pathways to the EU Policy Modeling outcome.

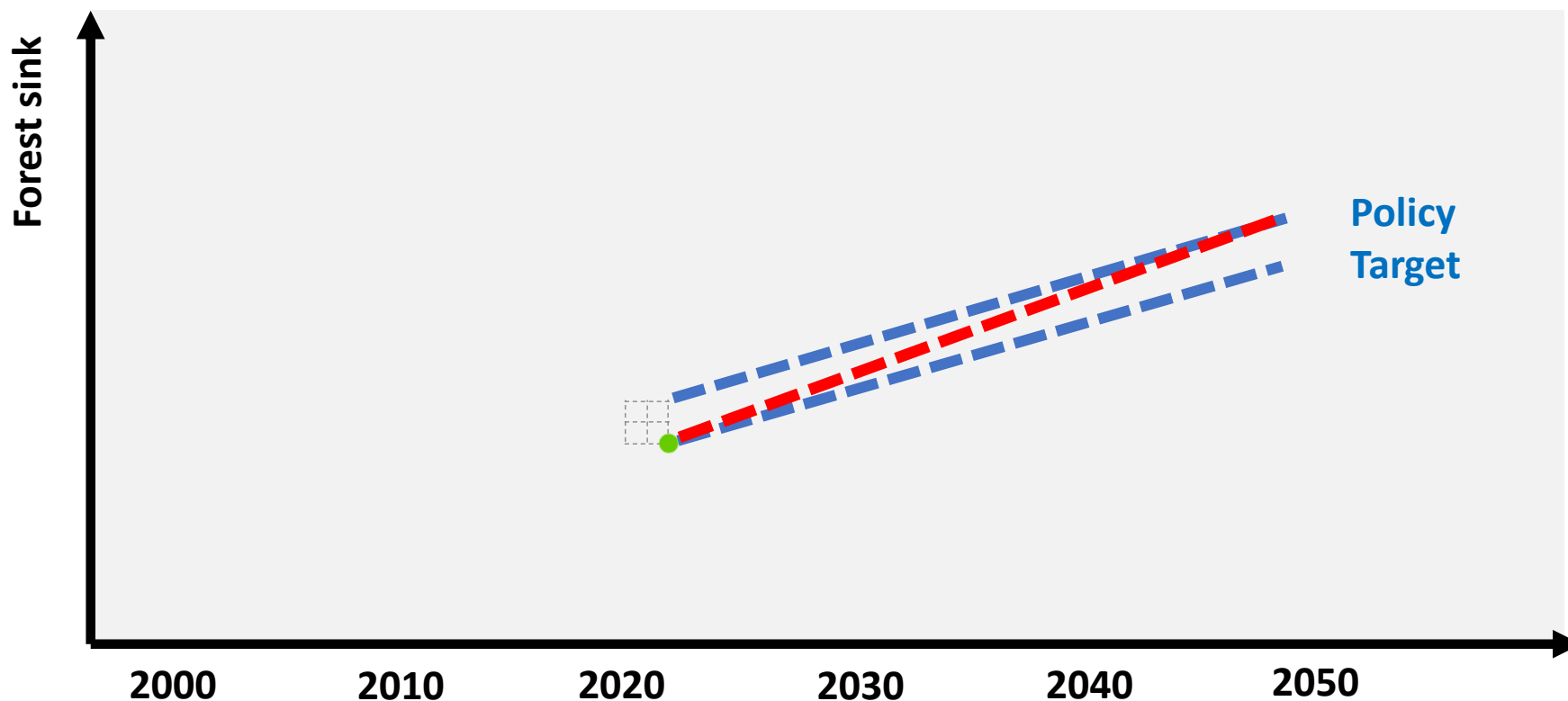


National-EU Policy Modelling toolbox

- A common dataset for aligning national and EU models
 - **Quantification to CC impact on forest growth** in national forest models by growth shifters calibrated to the detailed process-based models' responses and G4M-X.
 - **Natural disturbance impacts (fire, windstorms, bark beetles) in national forest models**, by assimilating the disturbance module from G4M-X.
- ↓
- **Improve monitoring and reporting of forest carbon pools across scales.**
 - **Quantify national forest mitigation pathways and verify that EU and national pathways are well aligned.**

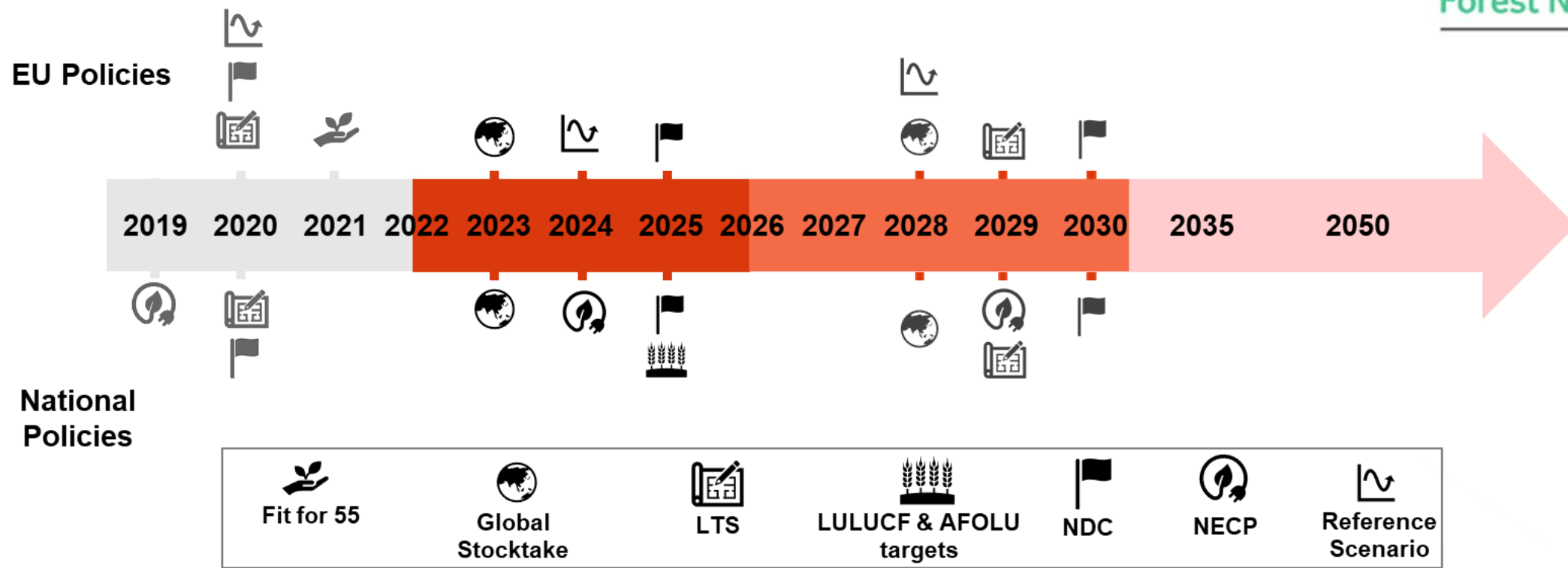


Near real time update of policy pathways and proofing towards reporting



- A standardized **near real-time model-data assimilation**
- Capacity for yearly updating of the model projections and **adjust mitigation strategies in the face of novel socioeconomic developments and disturbances** (COVID, socio-economic disruptions, natural calamities)
- Informing about deviations from planned pathways to **assess timely corrections for re-aligning to the National and EU policy objectives**

Expected impacts

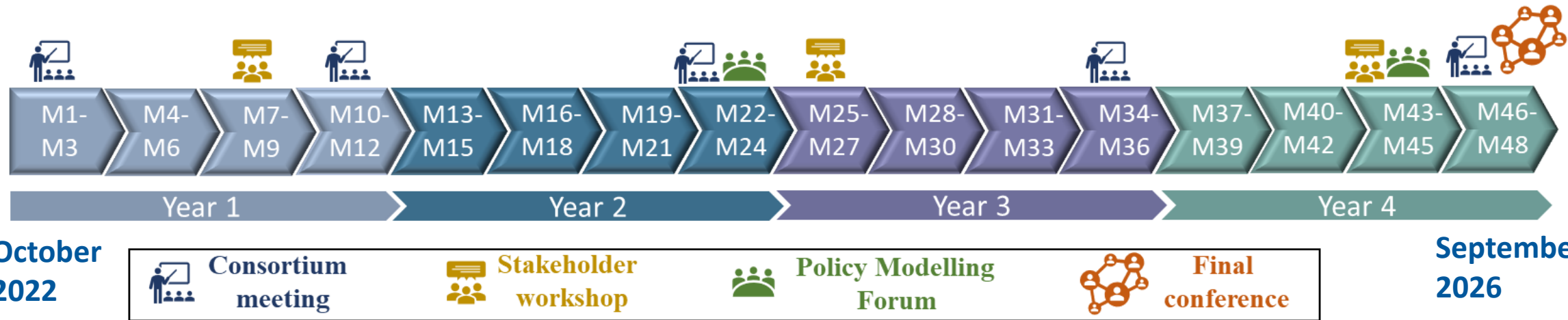


- Updated NECPs by the MSs in 2024 -> allocation of mitigation efforts to MSs for reaching the 2035 AFOLU neutrality
- EU revision of national GHGI inventories in 2025 -> setting the 2030 LULUCF national objectives for the sector



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ForestNavigator events and meetings



Extensive stakeholder engagement

- **Policy Steering Committee:** advise the project throughout its lifetime to maximize its policy relevance at EU and National level
DG-CLIMA, DG-ENV, EEA, Selected National Authorities
- **Policy Modelling Forum:** present ongoing work, develop policy scenarios, and benefit from exchange of modelling needs/results
policymakers and modellers from the consortium and from the broader modelling community
- **Stakeholder dialogue:** collect preferences on pathways, forest management and ecosystem services, and the Decision-making Platform
policy makers, modelling experts/researchers, forest owners and managers, business and industries, NGOs

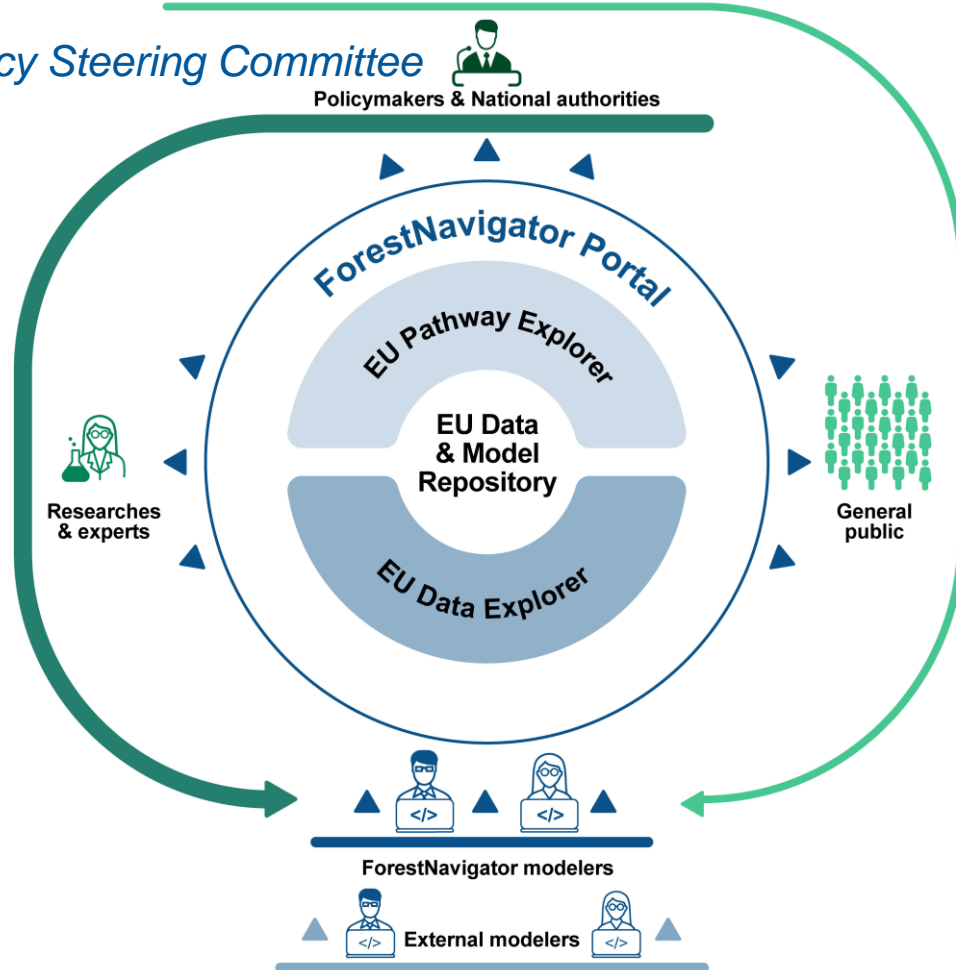
ForestNavigator Decision-Making Platform



Stakeholder dialogue



Policy Steering Committee



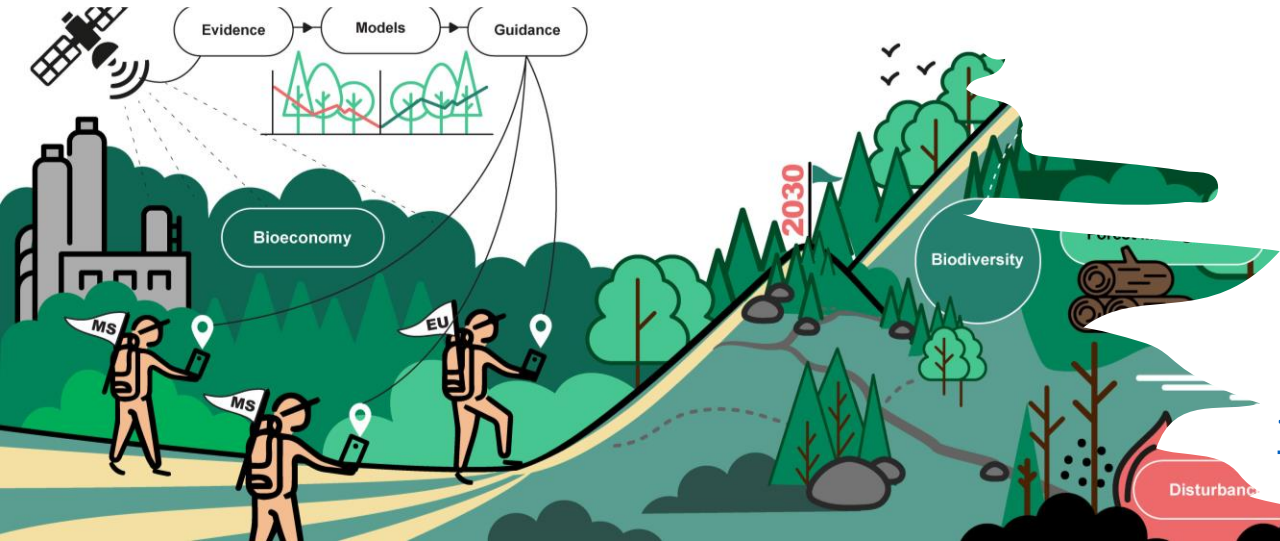
ForestNavigator Portal

- EU data repository
Database on near-real time updated information on forest cover/health/disturbances
- EU model repository
GitLab repository with model codes and executables (EU Policy Modelling)
- EU Data Explorer
Online portal to retrieve and visualize spatially-explicit data
- EU Pathway Explorer
Online portal to retrieve and visualize modelling results and robust pathways



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Policy Modelling Forum



Looking forward to engaging!

For more info:
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