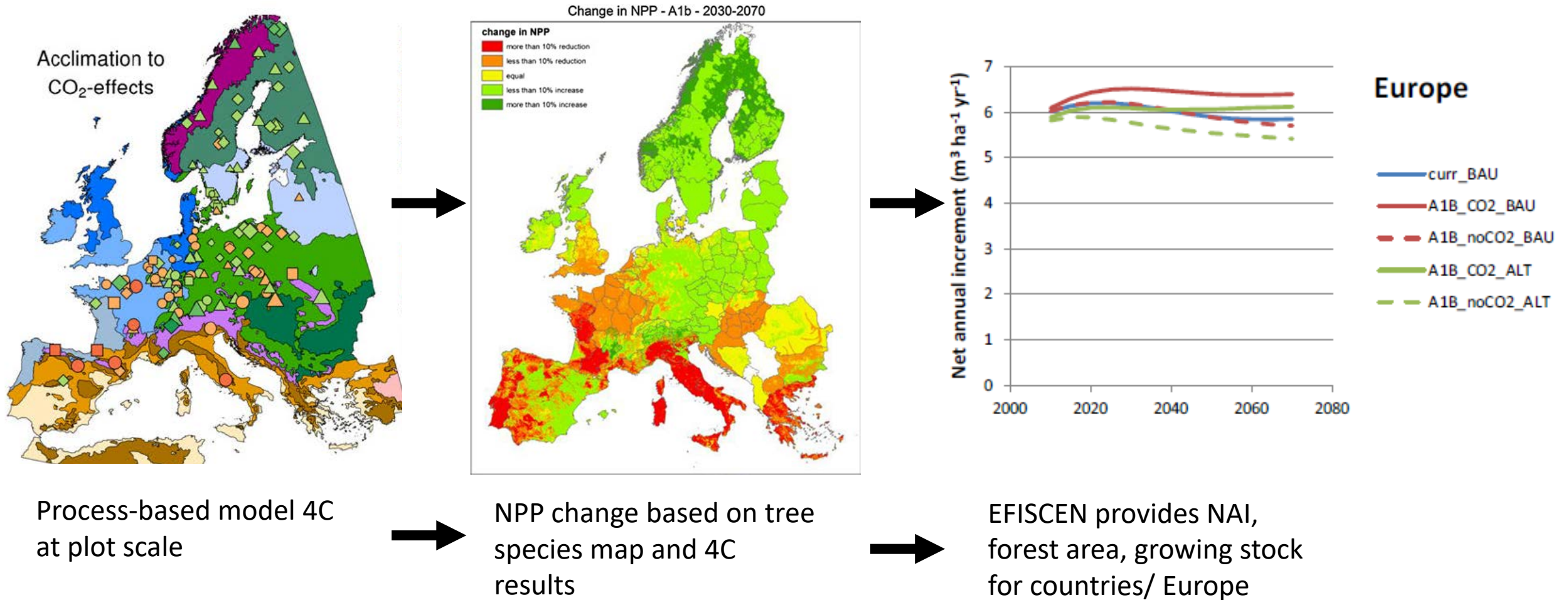


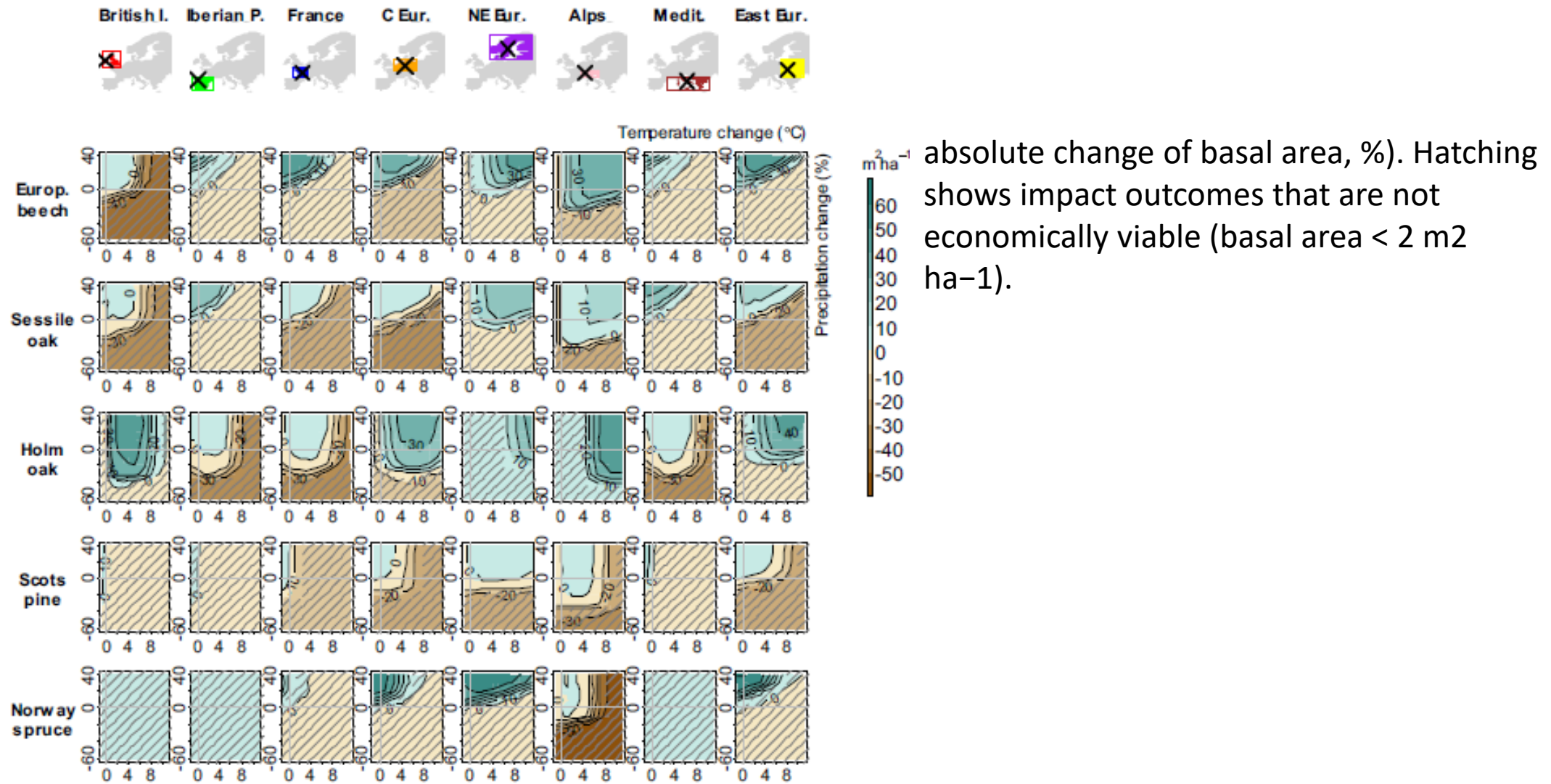
ISIMIP/PROCLIAS forest sector meeting

- discussing the idea of country scale multi-model simulations.
 - general idea (C. Reyer)
 - examples by D. Loustau, M Mahnken/M Gutsch...
- discussing the table of available models and their constraints/data needs etc.
- discussing next steps (e.g. integration of this activity as Task Group into COST Action PROCLIAS, next meetings, todos)
- short break-out group with co-authors on forest evaluation paper ⇒ see extra link(Mats Mahnken)

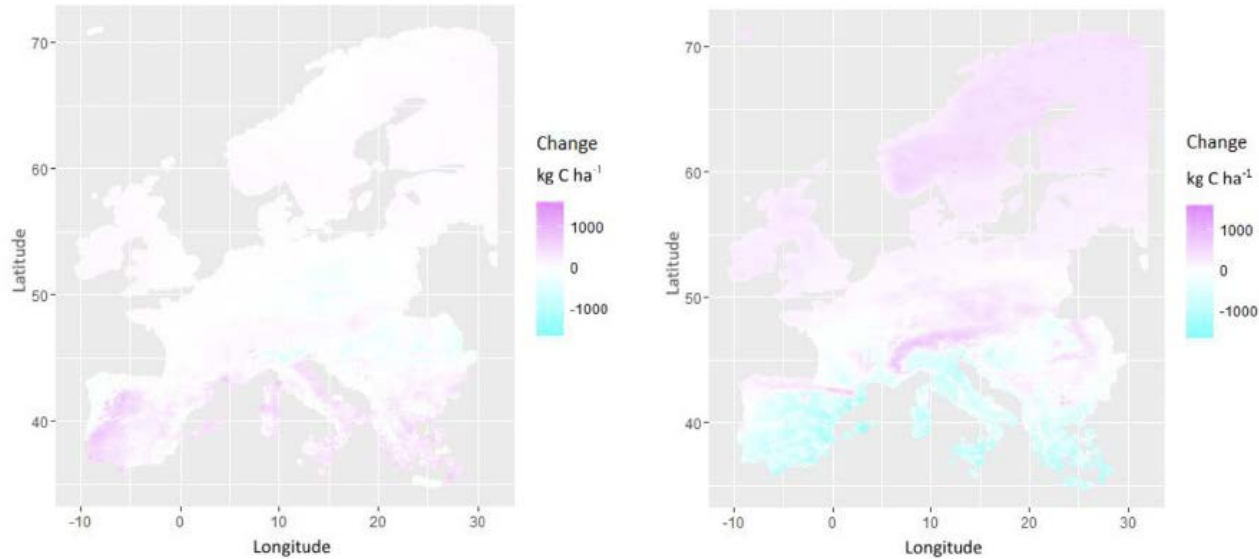
How to simulate climate impacts on European forests?



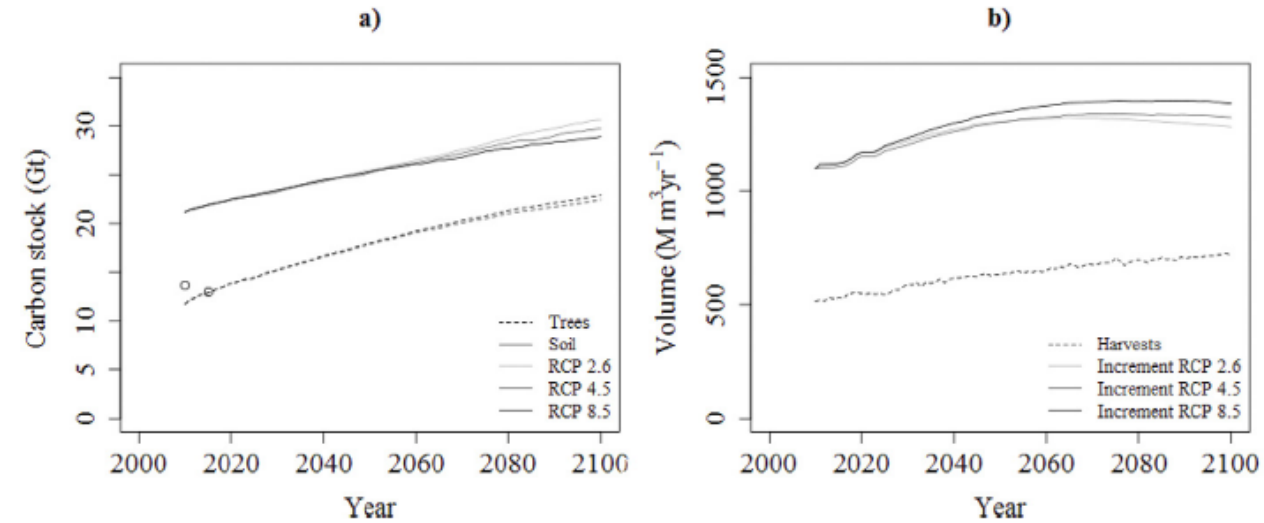
How to simulate climate impacts on European forests?



How to simulate climate impacts on European forests?

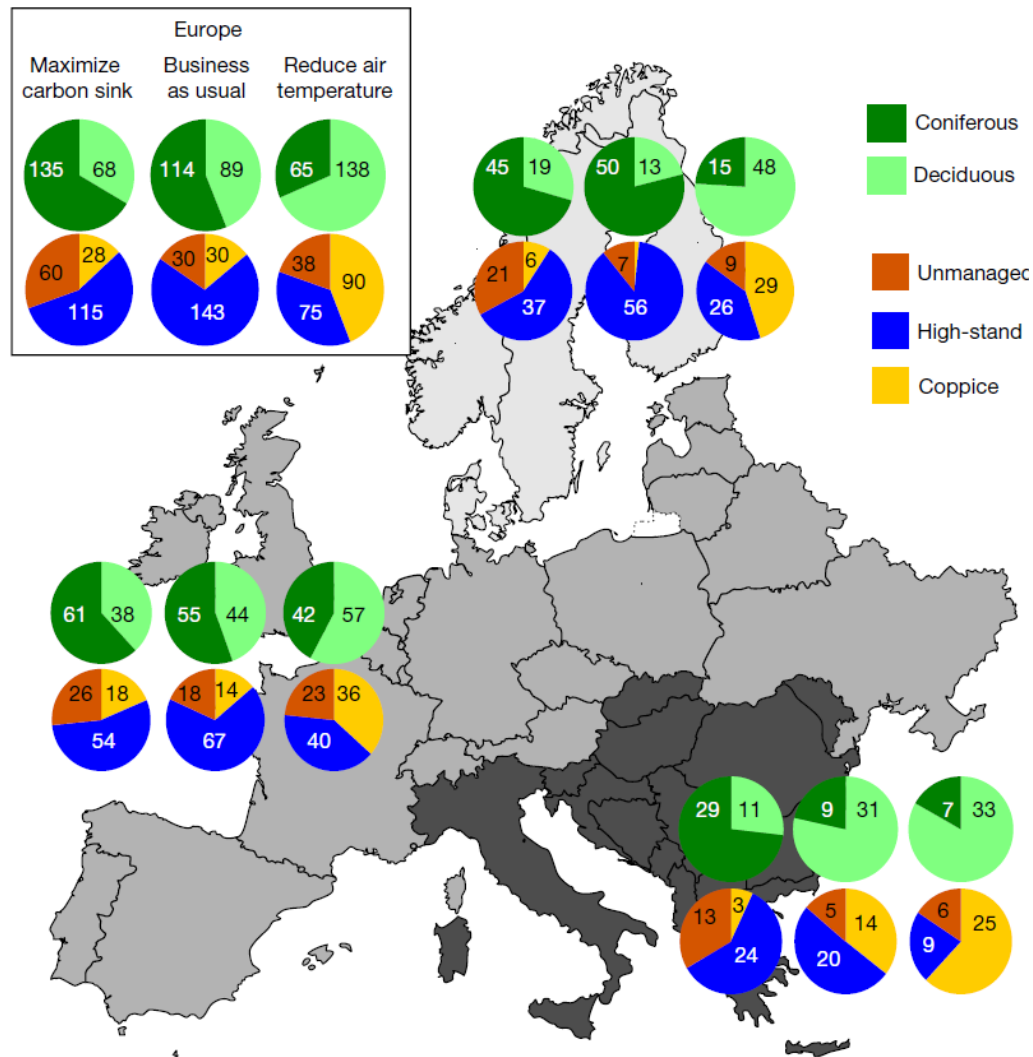


Difference between annual maximum potential carbon production (calculated as P in Eqn (1) and 10 when $fAPAR = 1$) (kg C ha⁻¹) between 2010 and 2100 in Europe in RCP 2.6 and RCP 8.5



a) Total forest stand and soil carbon, Europe, in BAU management with RCP2.6, RCP4.5 and RCP8.5 climate scenarios. The dots show statistics reported by FOREST EUROPE, 2015). b) Total EFI-GTM harvests and volume increment in BAU management with RCP2.6, RCP4.5 and RCP8.5.

How to simulate climate impacts on European forests?



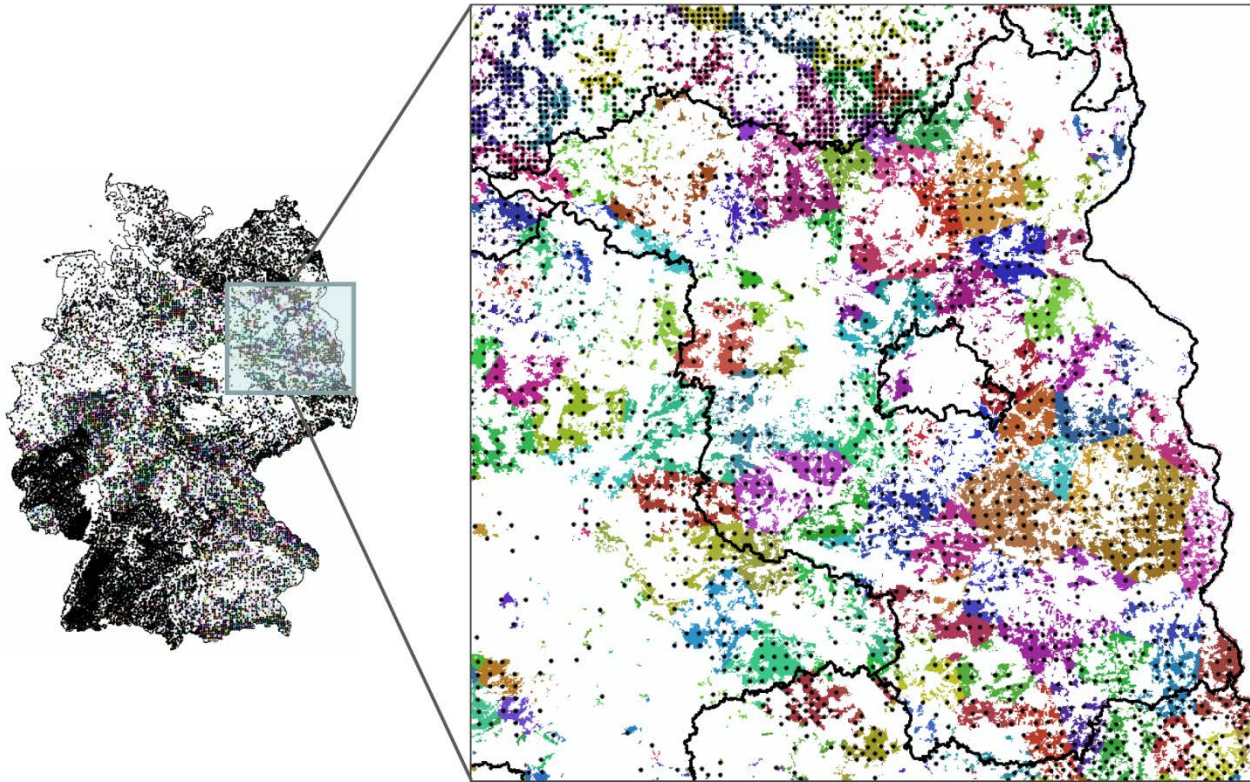
Forest surface areas ($\times 10,000 \text{ km}^2$)
by 2100 under different forest-
management portfolios.

Country-scale applications

Examples

- Denis Loustau - Forêts-21
- Mats Mahnken – 4C

4C initialization at country scale (GER)



- initialization at NFI grid (4x4 km)
- assign closest climate station (colored area) and soil (i.e. soil map BÜK1000) to each NFI plot
- at each NFI plot → angle count sample with single tree and stand information on:
 - *tree species*
 - *tree age*
 - *tree height*
 - *tree diameter*
 - *tree representatives for 1ha*
- initialization of a 4C-specific tree file with tree cohorts and initial values of biomass components and tree allometries

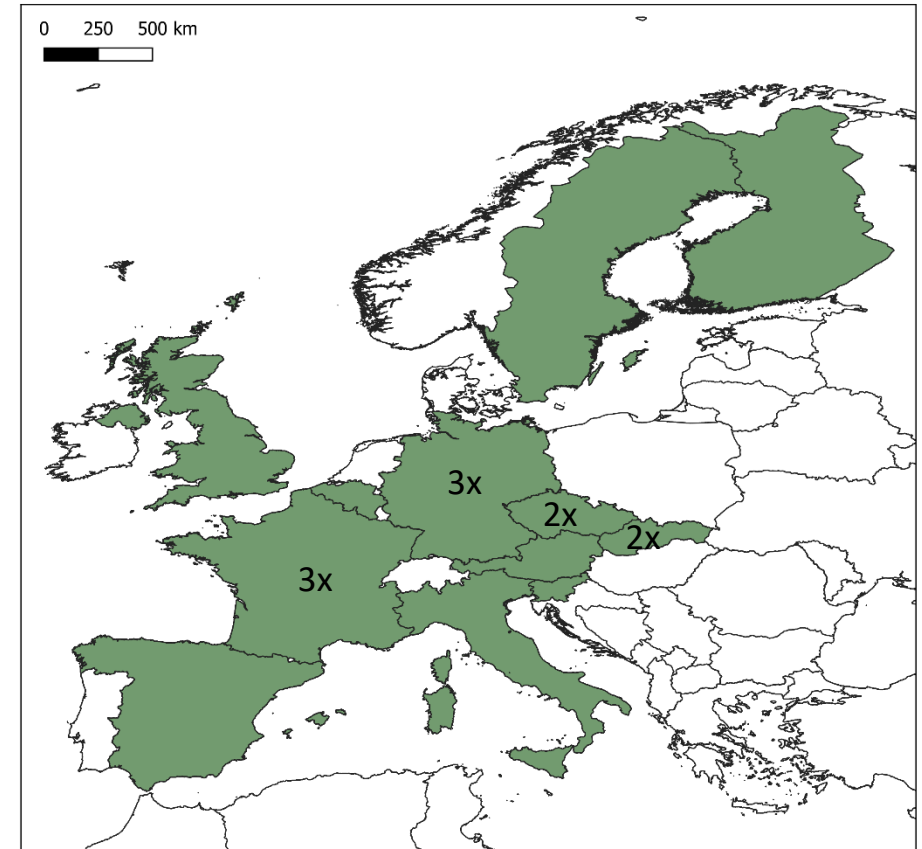
Model Table

https://docs.google.com/spreadsheets/d/186ass6P2n0qFrCk5Td9bnIJth9hCZrJ6_PA_SrN6tDn8/edit?usp=sharing

Model	Researcher Names	Model	Researcher Names
3D-CMCC-FEM	Alessio Collalti & Team	iLand	Rupert Seidl
3PG	Volodymyr Trotsiuk	Landscape-DNDC	Rüdiger Grote
3PGN-BW	Rasoul Yousefpour, Andrey Lessa Derci Augustynczik	LandClim	Harald Bugmann and team
4C	Martin Gutsch, Mats Mahnken	LPJ-GUESS	Thomas Hickler
ANAFORE	Gaby Deckmyn, Joanna Horemans	LPJ-GUESS	Anja Rammig
BALANCE	Thomas Rötzer	ORCHIDEE-CAN	Bertrand Guenet, Daniel Goll, Emilie Joetzjer, Anne-Sofie
BASFOR	David Cameron	PICUS	Manfred Lexer
Blome-BGC-MUSO	Horvath Ferenc	PREBAS	Francesco Minunno, Mikko Peltoniemi, Annikki Mäkelä
CARAIB	Louis Francois	SALEM	Patrick Vallet
CASTANEA	Christophe Francois, Eric Dufrêne, Nicolas Delpierre	SIBYLA	Katarina Merganicova
EFISCEN-SPace	Mart-Jan Schelhaas		
ForClim	Harald Bugmann and team		
FORGRO	Koen Kramer	15/27 Models filled in table, Thanks	
FORMIND	Friedrich Bohn		
GO+	Denis Loustau		
GOTILWA+	Santi Sabate, Daniel Sala		
HETEROFOR 1.0	Mathieu Jonard, Frédéric André		

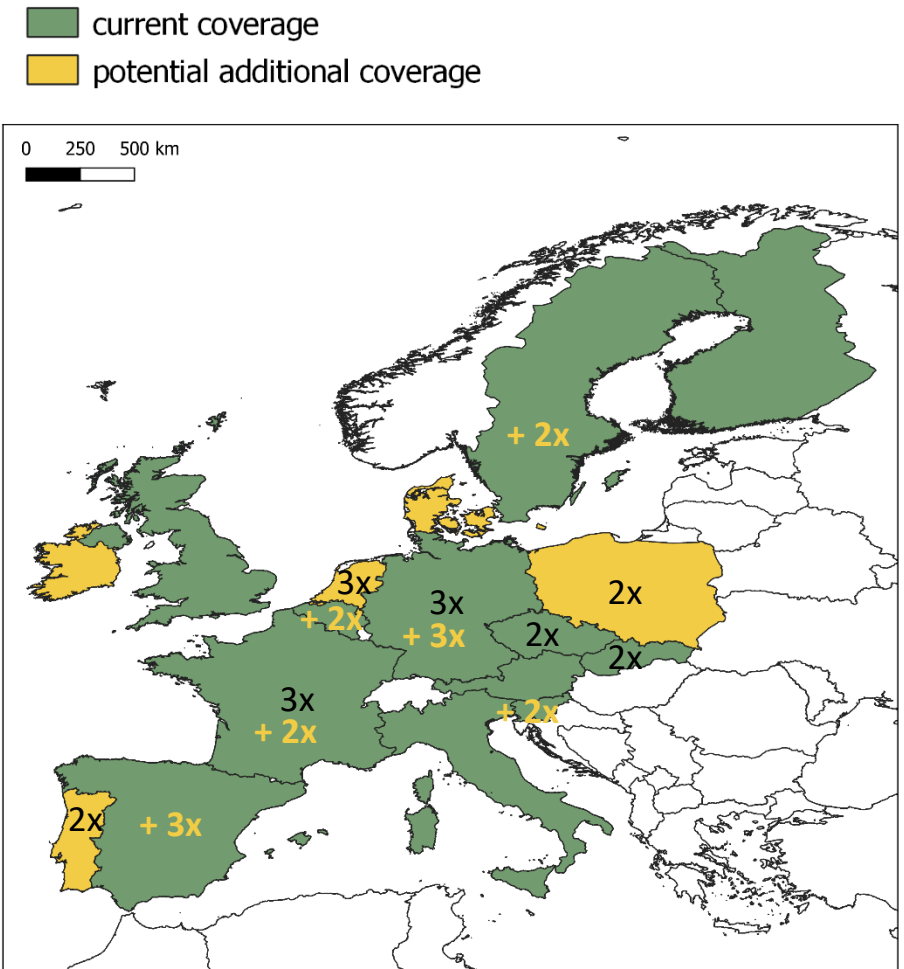
Which country / large regions could you simulate easily?

- “Europe (monospecific plots : deciduous oaks, beech, Scots pine, Spruce), European forests, most common tree species, temperate forests in Europe, temperate forests in Europe, central Europe, European mt ranges”



Which other countries / regions would you like to try to simulate?

- “everywhere where data are available (3x), mainly temperate/boreal forests, Douglas Fir, Fir, Eucalyptus, evergreen oak, Northern Europe and Mediterranean countries (2x)”



Data needs

Stand data:

- NFI data or similar (10x)
- "Spin-up" (3x) from planting/forest age/tree species composition

Soil data

- what's available (2x)
- European Soil Database v2.0 (5x)
- Country-specific / own data (3x)

Is simulating at country-scale under a range of different scenarios computationally feasible? Do you have the computational resources?

- Yes (7x)
- No (2x)

Topics

- climate change attribution (2x)
- management change under climate change (4x)
- disturbance under climate change (2x)
- We are open to a wide range of scenario calculations. We need to talk about the OBJECTIVES first, however... (3x)

Next steps

- integration of this activity as Task Group into COST Action PROCLIAS,
- todos
- next meeting