

# Update on exchange with the Team of Specialists on Forest Sector Outlook Studies

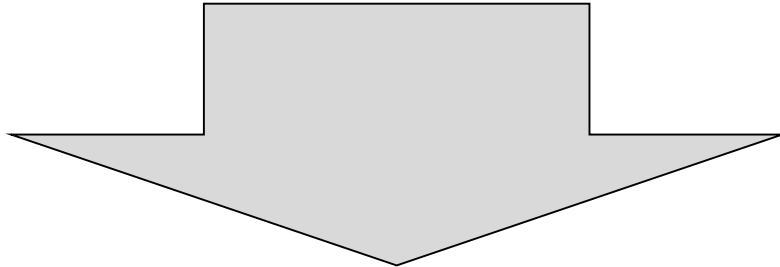
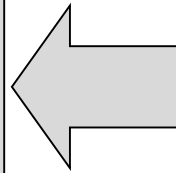
- Meeting in Koli, Finland, February 2019



# FORMASAM Structure

**TG1: Future Forest Management Scenarios**  
(Lead MJ Schelhaas)

**UNECE,  
ToS**

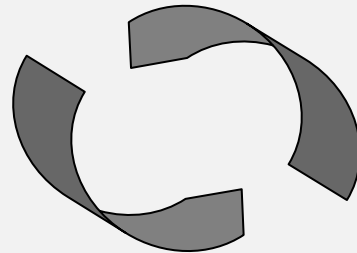


**Infrastructure**



Forest management models at:

**TG2: stand scale**  
(Lead A Mäkelä)



**TG4: European scale**  
(Lead A Rammig)

**TG3: landscape scale**  
(Lead R Seidl)

## Aim of the ToS/UNECE:

- **Produce a new Forest Sector Outlook Study (FSOS III) by 2020**
- **Covering North America, Europe and Russia**
- **Answering the main policy questions as formulated by the UNECE member states/policy makers/stakeholders**

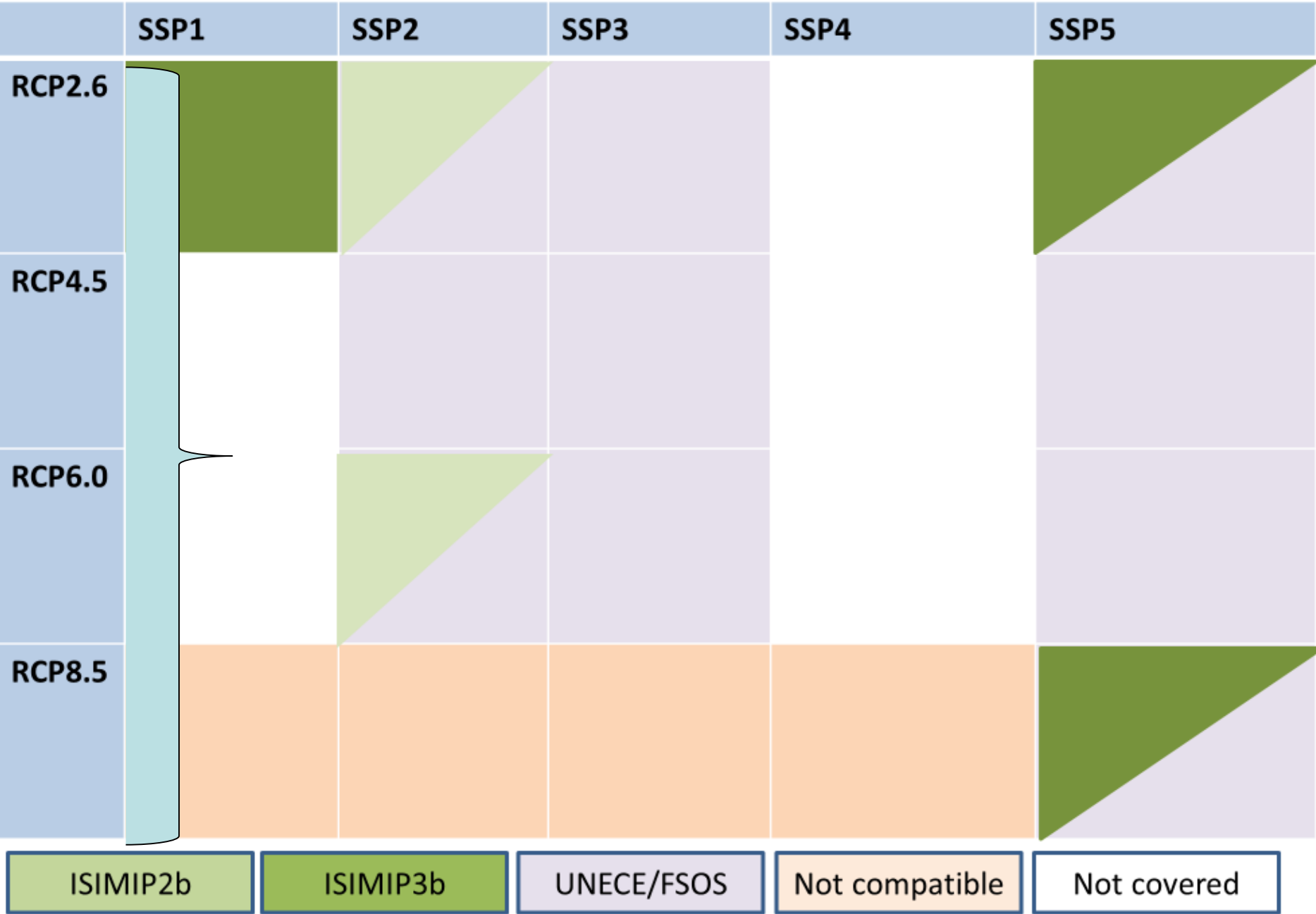
# Relation with FSOS activities

- **From FSOS:**
  - **Harvest data from GTM modelling of SSPs**
  - **Input from ToS on feasibility/likelihood/implementation of management scenarios in different regions in Europe**
- **To FSOS**
  - **Assistance in quantifying impact of RCPs on forest growth for GTM modelling**
  - **Insight in adaptation and mitigation potential of different management scenarios**
  - **Perhaps reality check of GTM outcomes (together with ToS)**
  - **Inputs to mitigation and adaptation chapters**
- **But realising this is only a networking project**

# RCP-SSP combinations provide climate and forest harvest demand

	SSP1	SSP2	SSP3	SSP4	SSP5					
RCP2.6	Storylines on harvest demand									
RCP4.5										
RCP6.0						Storylines on need for adapatation and presumed focus on mitigation				
RCP8.5										
ISIMIP2b	ISIMIP3b	UNECE/FSOS	Not compatible	Not covered						

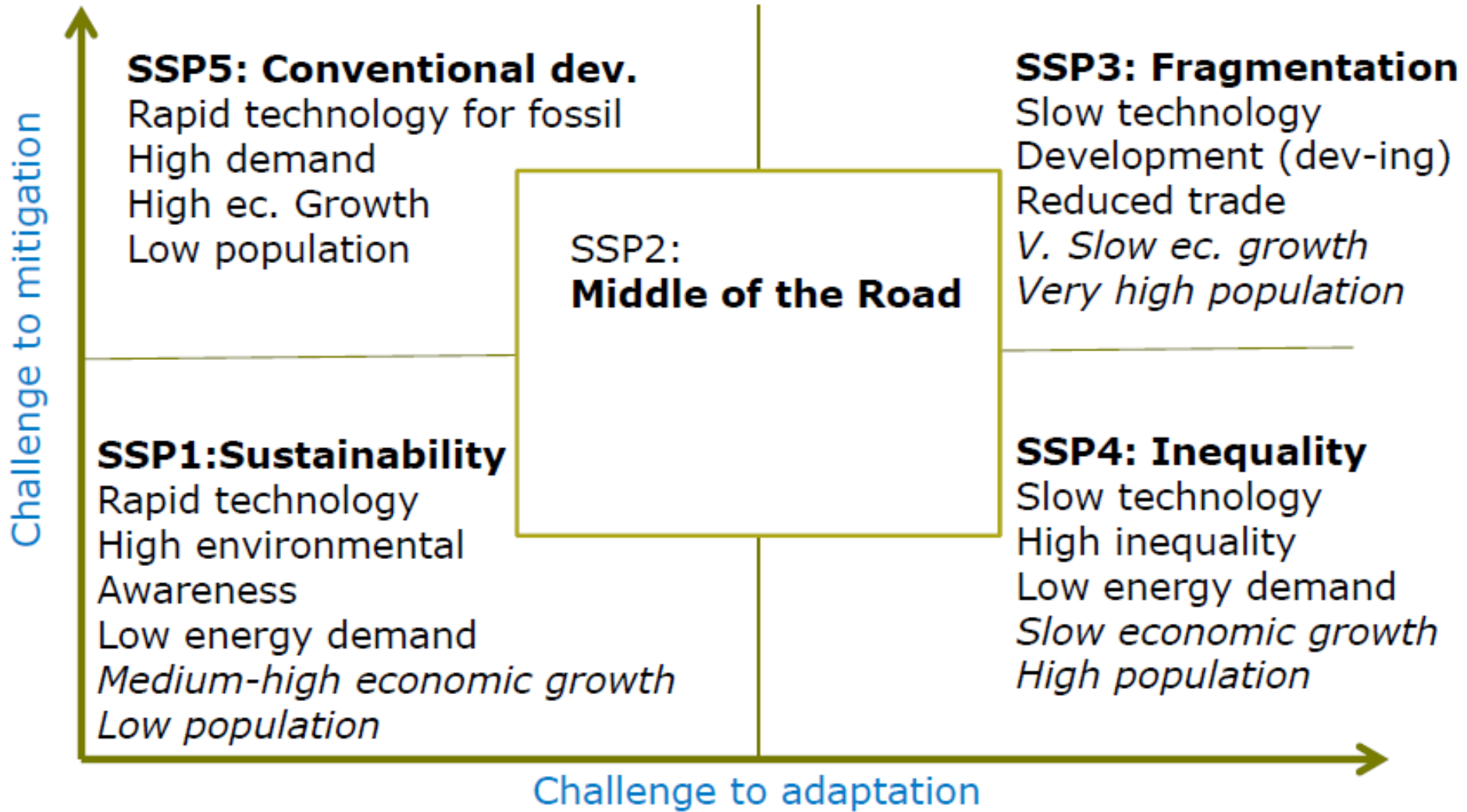
# RCP-SSP combinations provide climate and forest harvest demand



# Example of possible ISIMIP2b RCP2.6 and RCP6.0 storylines

- **rcp26soc**  
Future forests are assumed to be managed towards maximizing mitigation benefits (e.g. by changing the tree species or the silvicultural regime). Depending on the region and forest stand, this could mean focusing on species and management measures to maximize (1) the production of wood for bioenergy (highly productive species, short rotations), (2) high in-situ carbon stocks, or (3) production of harvested wood products with a long lifetime (sawntimber, veneer...).
- ➔ add sth about „minor adaptation challenges? E.g. stabilizing stands
- **rcp60soc**  
Future forest are assumed to require adaptive management (such as “assisted migration” or reduction of disturbance damage) where present-day forests are managed according to current practices until final harvest and then new, more adapted forests are established (e.g. with management focusing on increasing the stability of the stand or on replacing tree species that would be the natural vegetation under the projected climate change according to Hanewinkel et al. (2012)).
- ➔ add sth about bioeconomy, not so much for mitigation but sustainability
- **rcp85soc: ?**
- ➔ SSP-axis provides harvest demand and speed of transition period for landscape/EU scale models (e.g. how fast are mitigation or adaptation sceanrios implemented?, is assissted migration allowed?)

# Shared Socioeconomic Pathways (SSPs)

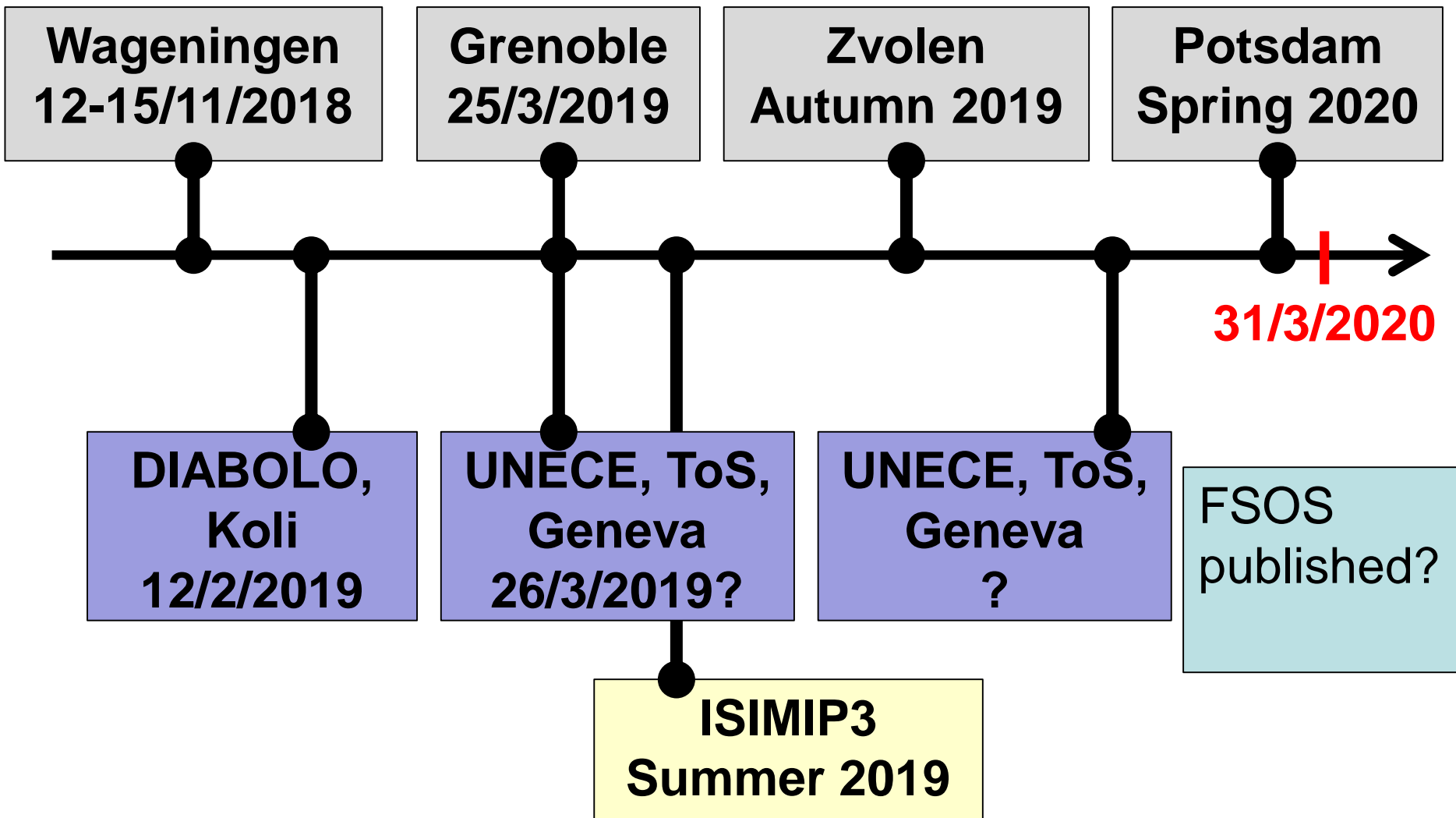




- **Switch to GFPM presentation**

[http://www.unece.org/fileadmin/DAM/timber/meetings/2019/20190214/09\\_Nepal\\_and\\_Prestemon\\_UNECE\\_Koli\\_02\\_06\\_2019\\_PN\\_JPP.pdf](http://www.unece.org/fileadmin/DAM/timber/meetings/2019/20190214/09_Nepal_and_Prestemon_UNECE_Koli_02_06_2019_PN_JPP.pdf)

# Timeline FORMASAM and related activities



# Conclusions

- **We received the outputs from the GFPM model for 3 scenarios, the other 2 are available on request**
- **The GFPM work will be presented as a background report, the main study will focus on answering the policy questions, relying on the background report and published work**
- **Formasam will not deliver specific simulations to the study, but can contribute with knowledge to answer the adaptation/mitigation questions -> Louis**
- **We can help with quantification of climate change impact on forest growth for GFPM**

# Back to scenario development



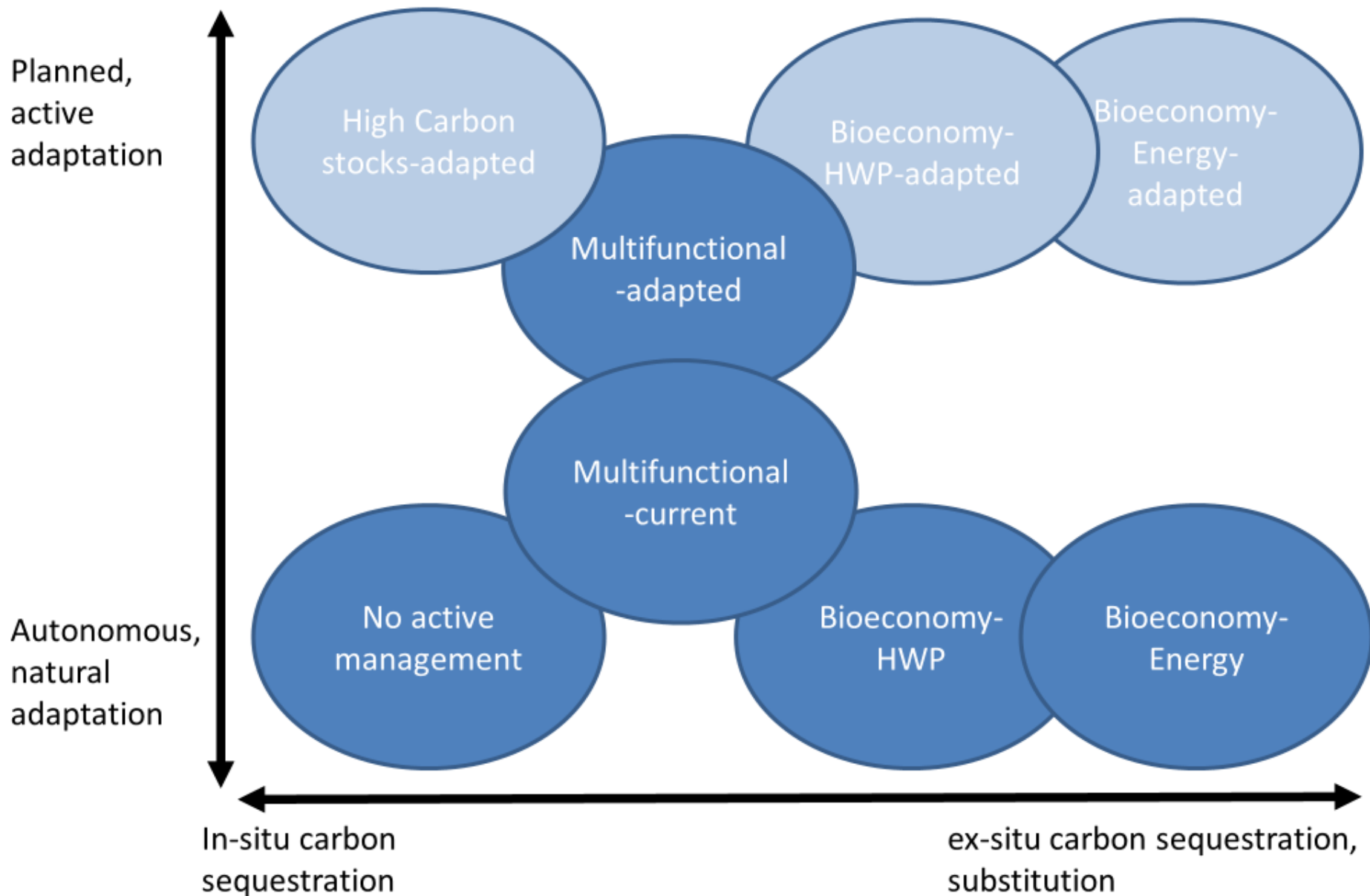
# Aim of FORMASAM

- to develop future forest management scenarios for adaptation and mitigation of climate change that
  - are consistent from stand → landscape → continental level,
  - allow to explore options for climate change mitigation and adaptation at the backdrop of a European bio-economy and changing climatic conditions.


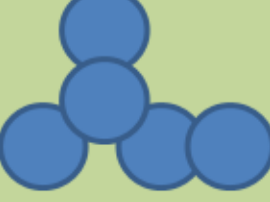

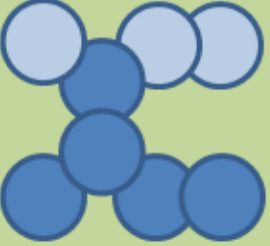
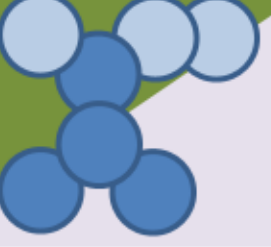
## Key questions

- Which regions and forest types are suitable to focus on biomass production for bioenergy generation, on production of long-lived high-quality timber materials, on conserving carbon-rich forests or on other forest services and products?
- What are the trade-offs of these management strategies within the same climatic scenario and across different climate scenarios?
- Are there management strategies that particularly increase or decrease forest resilience and forest service and product provisioning at the stand, landscape and continental scale?

# Forest mitigation and adaptation space provides context within each RCP-SSP combination

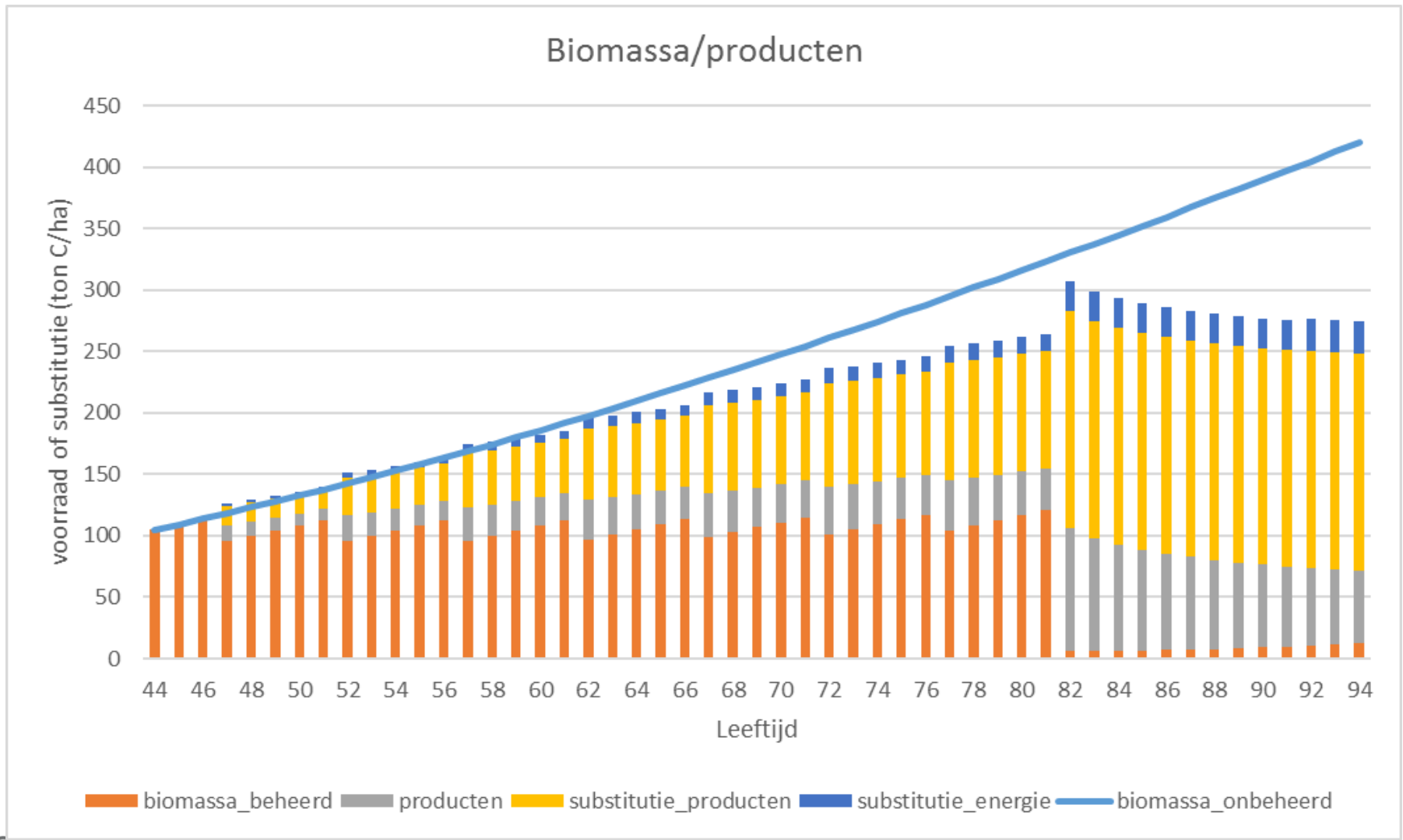


# RCP-SSP combinations + forest mitigation and adaptation space

	SSP1	SSP2	SSP3	SSP4	SSP5
RCP2.6					
RCP4.5					
RCP6.0					
RCP8.5					
	ISIMIP2b	ISIMIP3b	UNECE/FSOS	Not compatible	Not covered

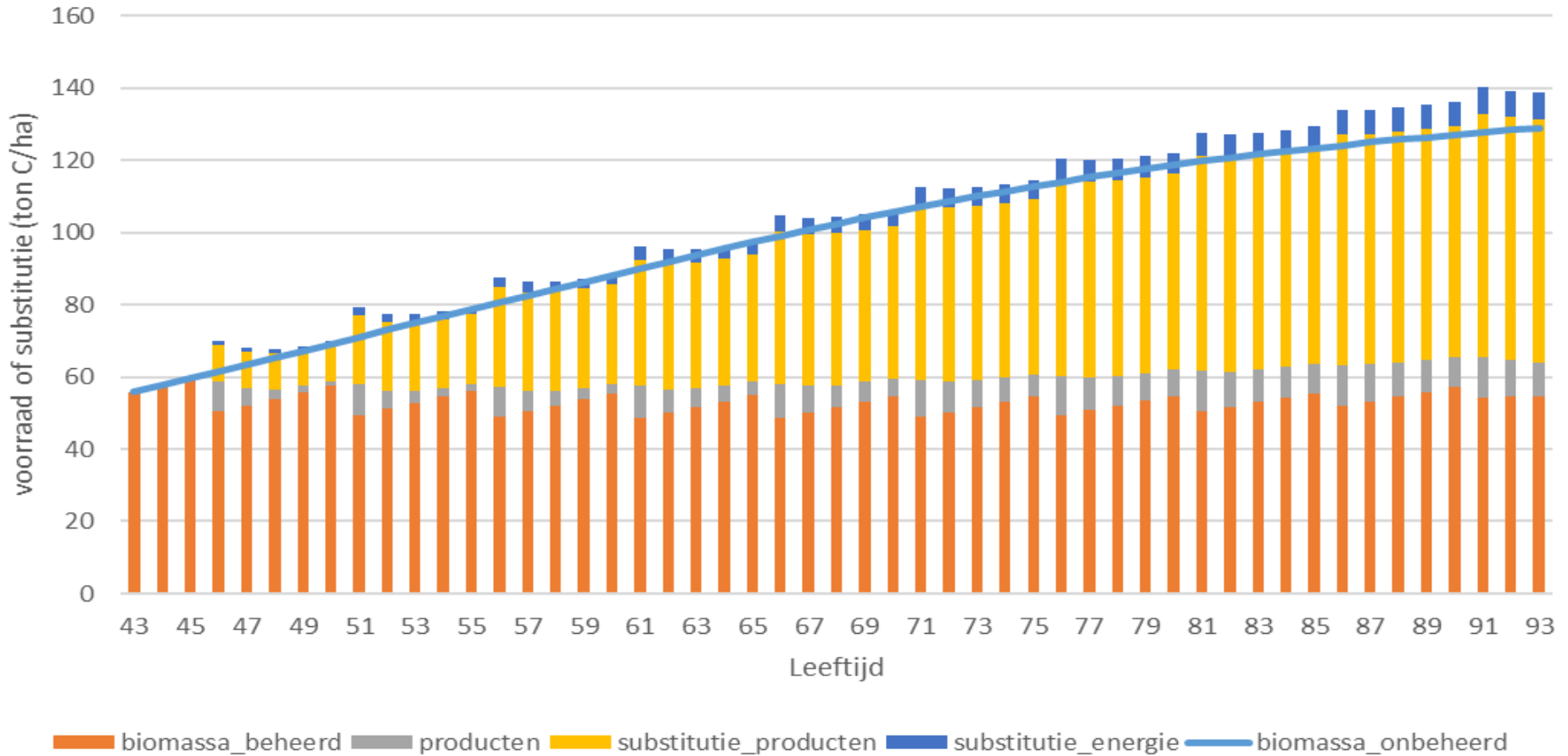


# Example from the Netherlands – Douglas fir

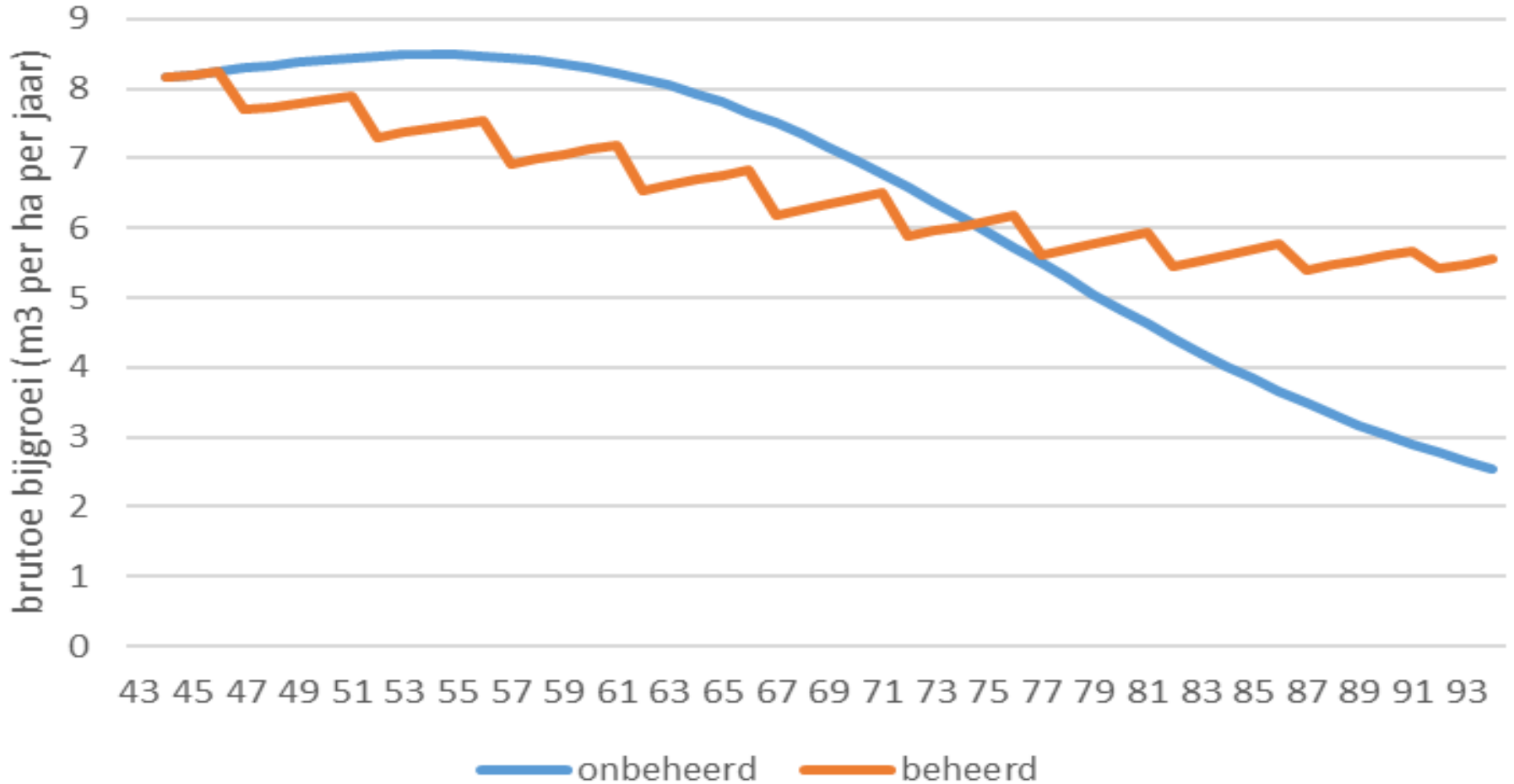


# Larch

## Biomassa/producten



# Increment larch



## Scaled up to the national level (kton CO<sub>2</sub>-eq)

	Douglas	larch	beech	total
area (ha)	4600	3850	6200	14650
Forest biomass	80	39	53	172
Deadwood	0	0	0	0
Soil				
Products	-40	-8	-27	-75
LULUCF effect	40	31	26	97
Substitution products	-35	-25	-36	-96
Substitution energy	-5	-2.6	-5	-12.6
Net effect	0	3.4	-15	-11.6