



# Challenges and experiences in adapting forest management to a changing climate – a practitioners' view

9<sup>th</sup> Annual Meeting European Integrate Network

4-6 October 2023

Lyla O'Brien, Silvester Boonen, and Andreas Schuck  
European Forest Institute, Bonn



# Context

- Increased extreme climatic events & pressure on forests
- Implementing climate change adaptation measures pressing
- Lacking overview of diversity of measures implemented across Europe
- Practitioner's perspectives on challenges & impacts on forest enterprises also lacking



Photo: Silvester Boonen

# Aim of the study – a practitioner's view

- **Evidence study funded by Swiss Federal Office for the Environment (BAFU)**

## **Main research questions:**

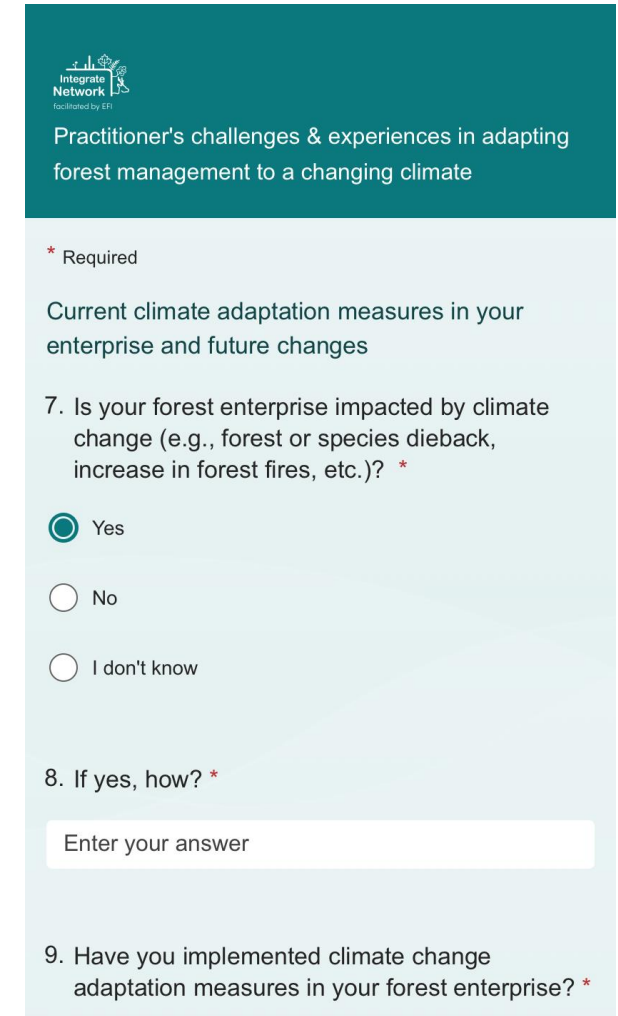
- What measures do practitioners use to adapt their forest enterprises to climate change?
- What challenges do they face?
- How do they inform their decision-making?
- How does the implementation of measures impact day-to-day functioning of the forest enterprise?


## **Overall goals:**

- Insight for practitioners on climate change adaptation measures
- Inform decision-makers on potential barriers to implementation

# Methods

- Online questionnaire (mix of multiple-choice & open-ended)
- Target: practitioners
- Translated into 17 languages
- Distributed through:
  - Integrate/Marteloscope Network
  - Local practice magazines/newspapers
  - Professional contacts
- Data processed by
  - Excel
  - R
  - MAXQDA (open ended)



  
Integrate  
Network  
facilitated by EFI

Practitioner's challenges & experiences in adapting forest management to a changing climate

\* Required

Current climate adaptation measures in your enterprise and future changes

7. Is your forest enterprise impacted by climate change (e.g., forest or species dieback, increase in forest fires, etc.)? \*

Yes

No

I don't know

8. If yes, how? \*

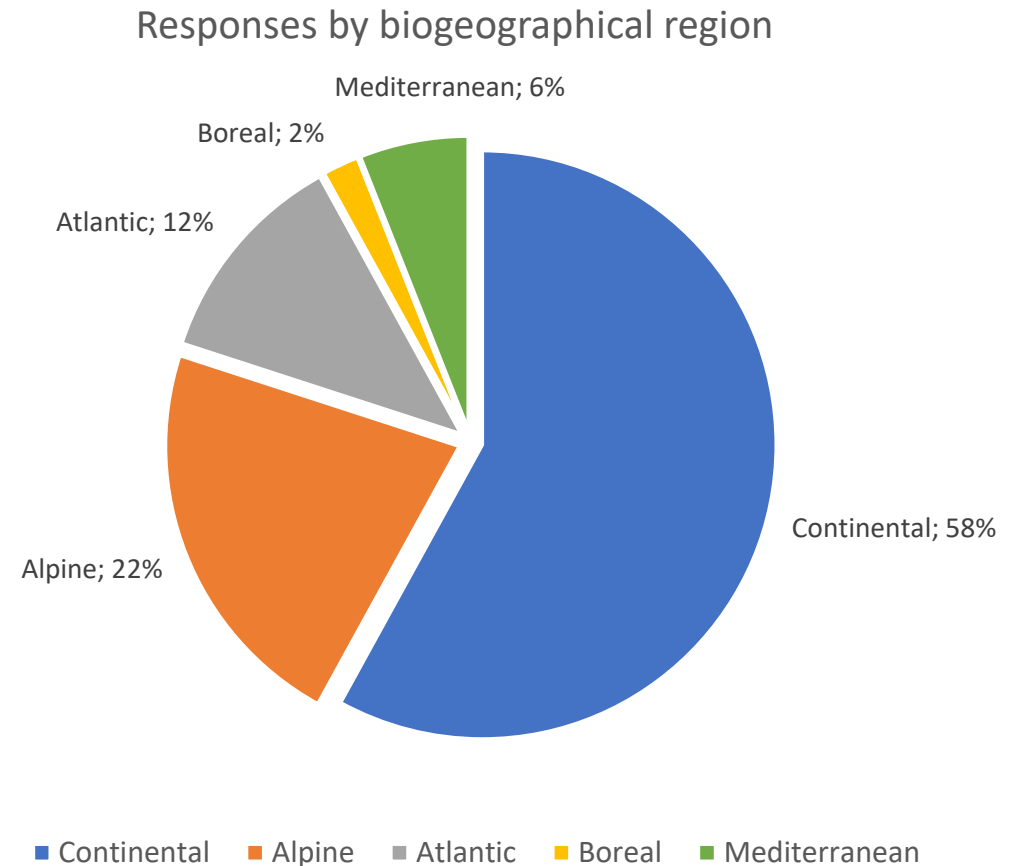
Enter your answer

9. Have you implemented climate change adaptation measures in your forest enterprise? \*

# Results

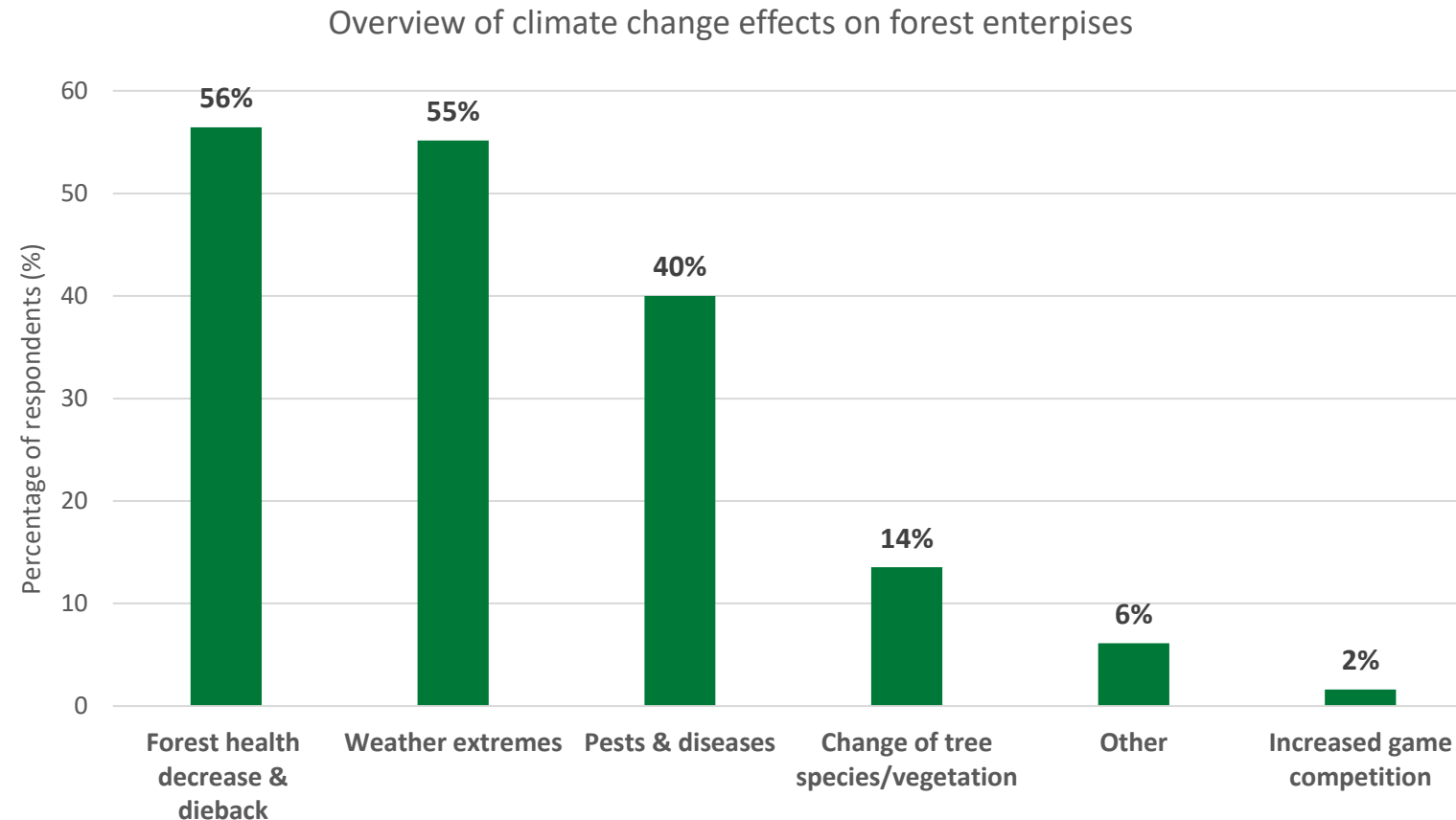
# Results: Response overview

- Total responses = 368
- 20 countries
- 6 biogeographical regions
- Pannonian (Hungary) (n=9) merged into Continental region
- Boreal excluded from biogeographical comparison (n=7)



# Results: Climate change effects

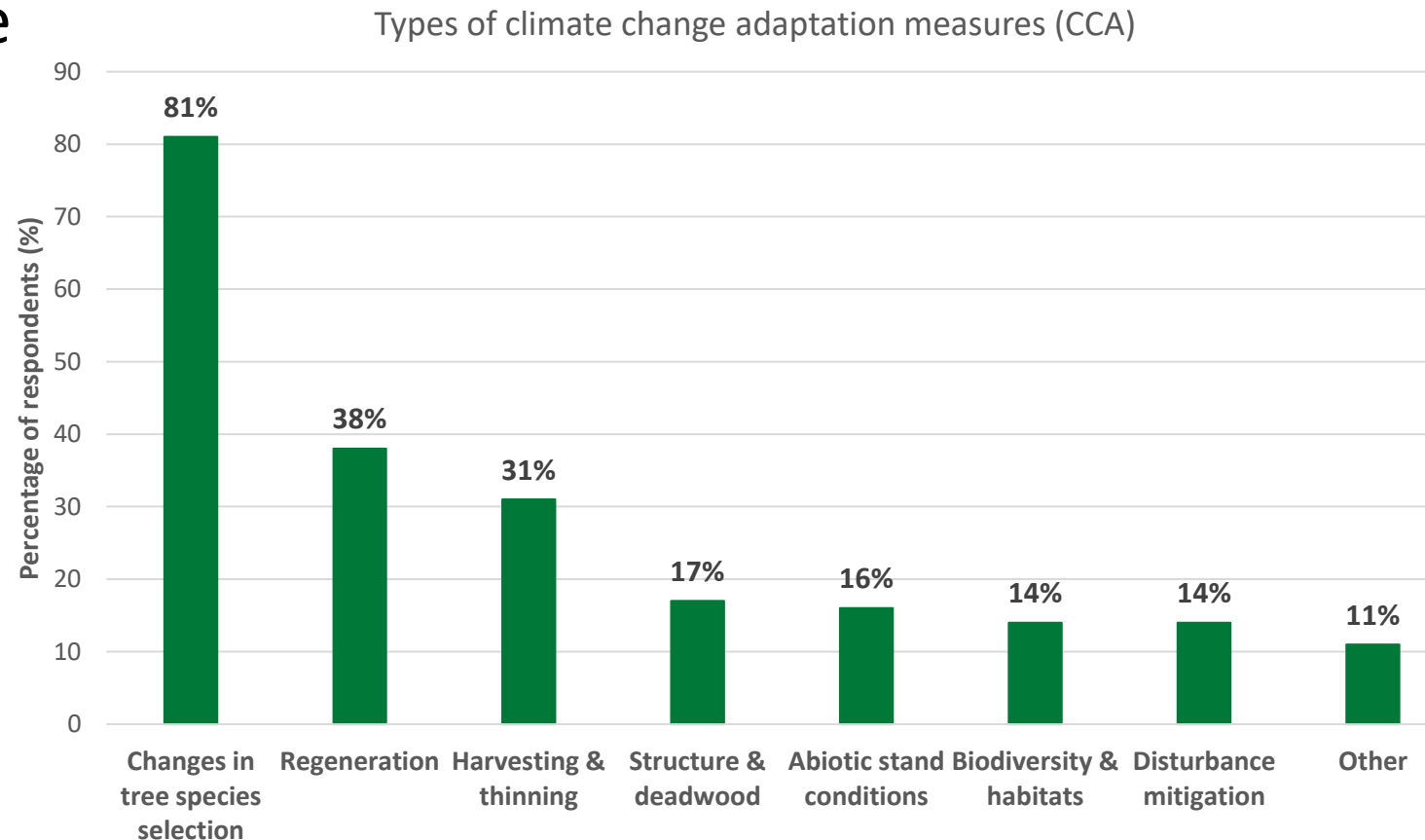
- 88% affected by climate change
- Decreases in forest health & dieback most common
- Weather extremes highest in Med\*, lowest in Cont\*/Alpine
- Pests & diseases highest in Cont, lowest in Alpine



(\* ) Med = Mediterranean; Cont = Continental

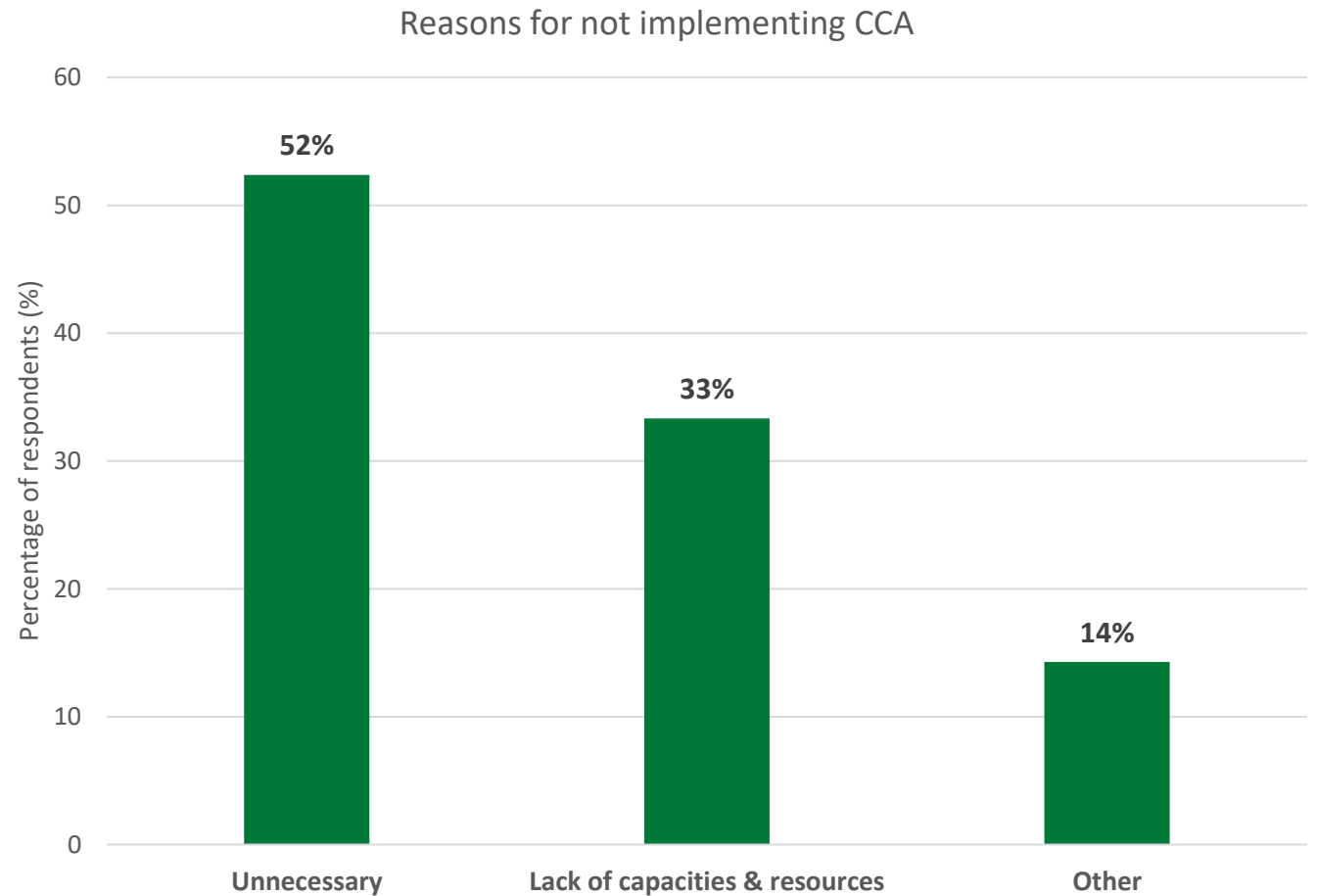
# Results: Implemented CCA measures

- 89% implement climate change adaptation measures (CCA)
- Changes in tree species most prominent measure
- Most measures implemented across biogeographical regions



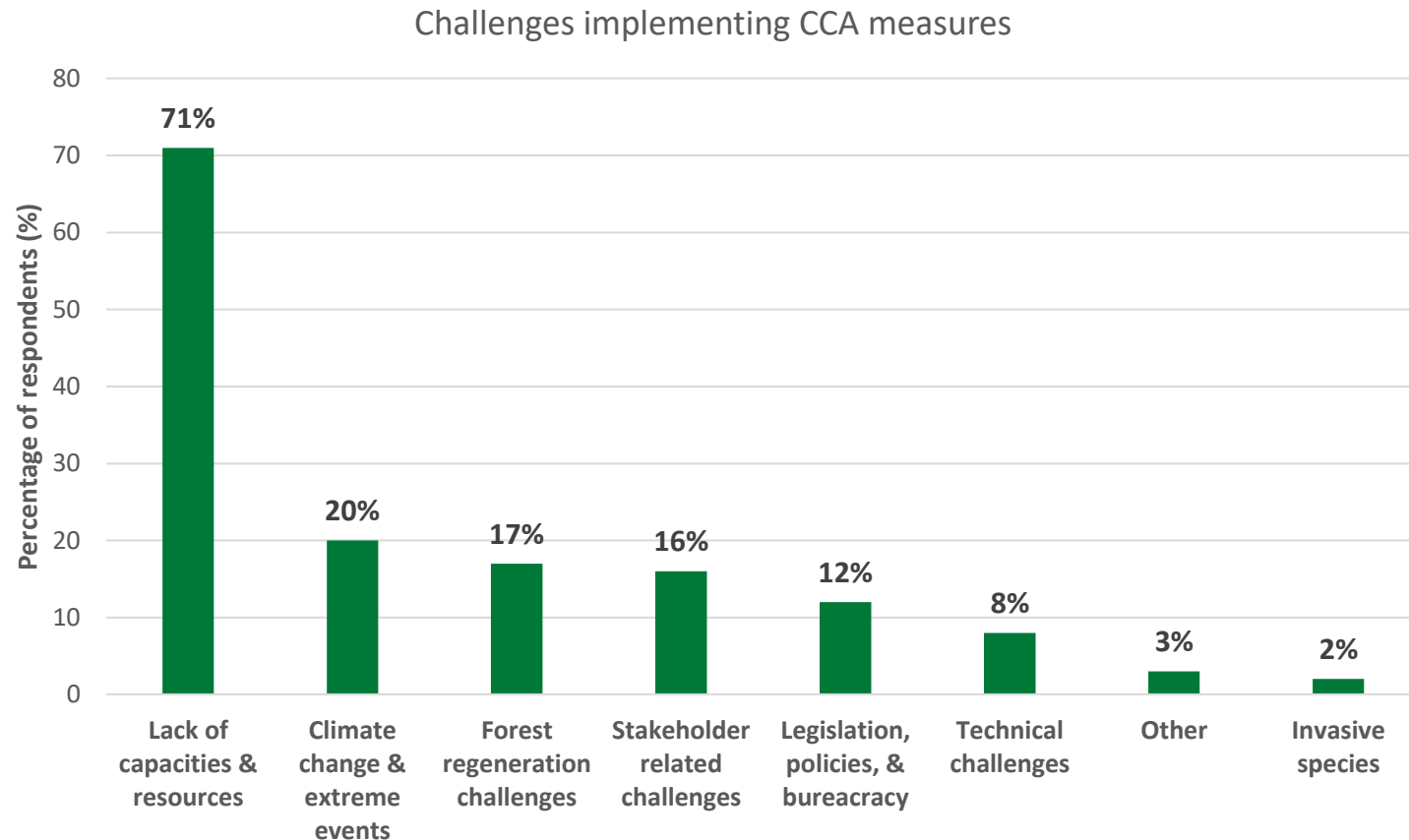
# Results: Reasons for not implementing CCA measures

- 11% do not implement any CCA measures
- Not necessary most prominent reason
  - Highest Cont/Alpine
  - Lowest Med
- Lack of capacities & resources highest in Med & Atlantic



# Results: Challenges with CCA implementation

- 75% experience challenges
- Lack of capacities & resources most prominent
- Challenges similar across biogeographical regions
- Forest regeneration & invasive species only in Cont/Alpine



# Results: Conflicts/synergies CCA vs. Biodiversity

## **Synergies (79% of respondents)**

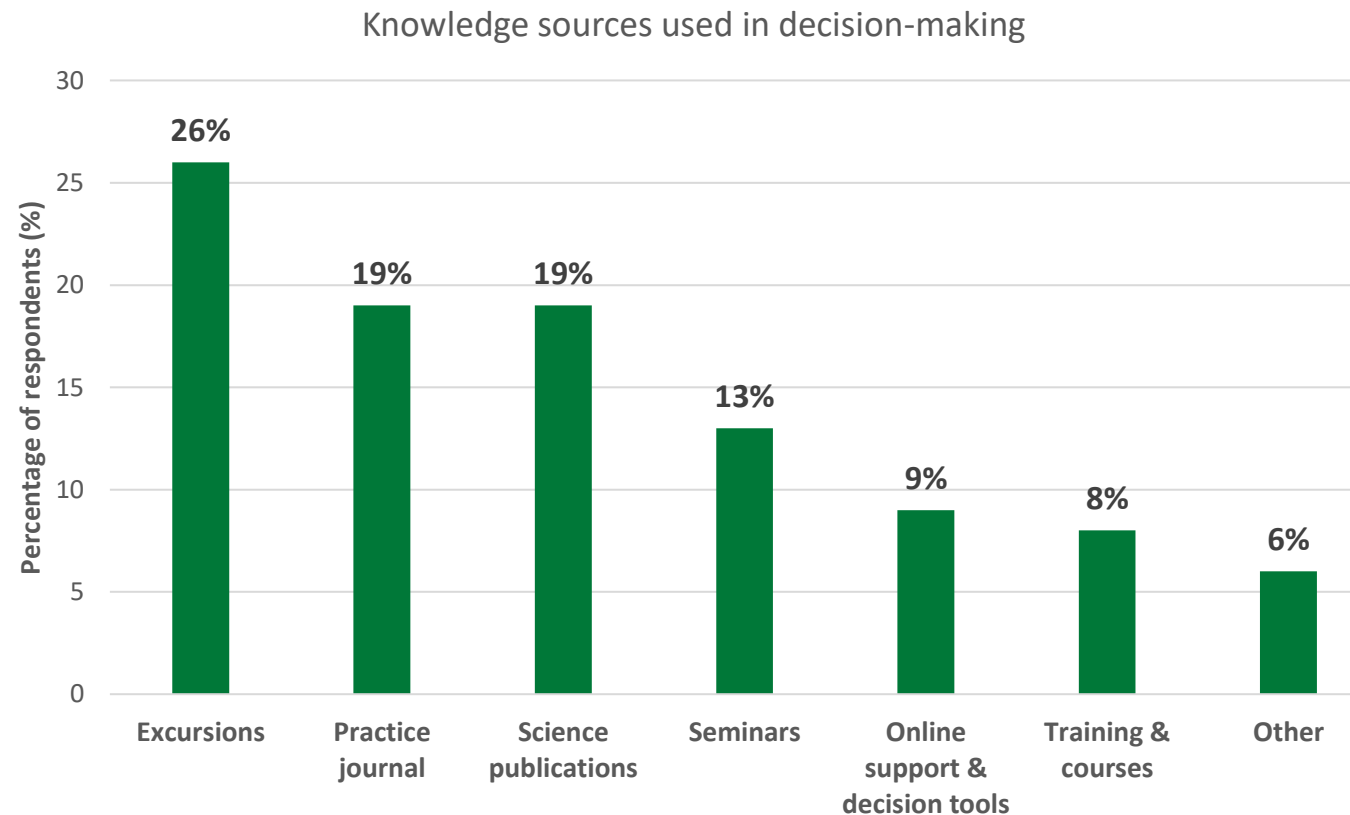
1. Tree species diversity -> forest biodiversity
2. Structural diversity -> forest biodiversity
3. Water retention -> habitat creation

## **Conflicts (26% of respondents)**

1. More deadwood -> higher disturbance risks
2. Conflicting policies & goals between CCA & biodiversity
3. Use of non-native tree species -> negative impacts on biodiversity

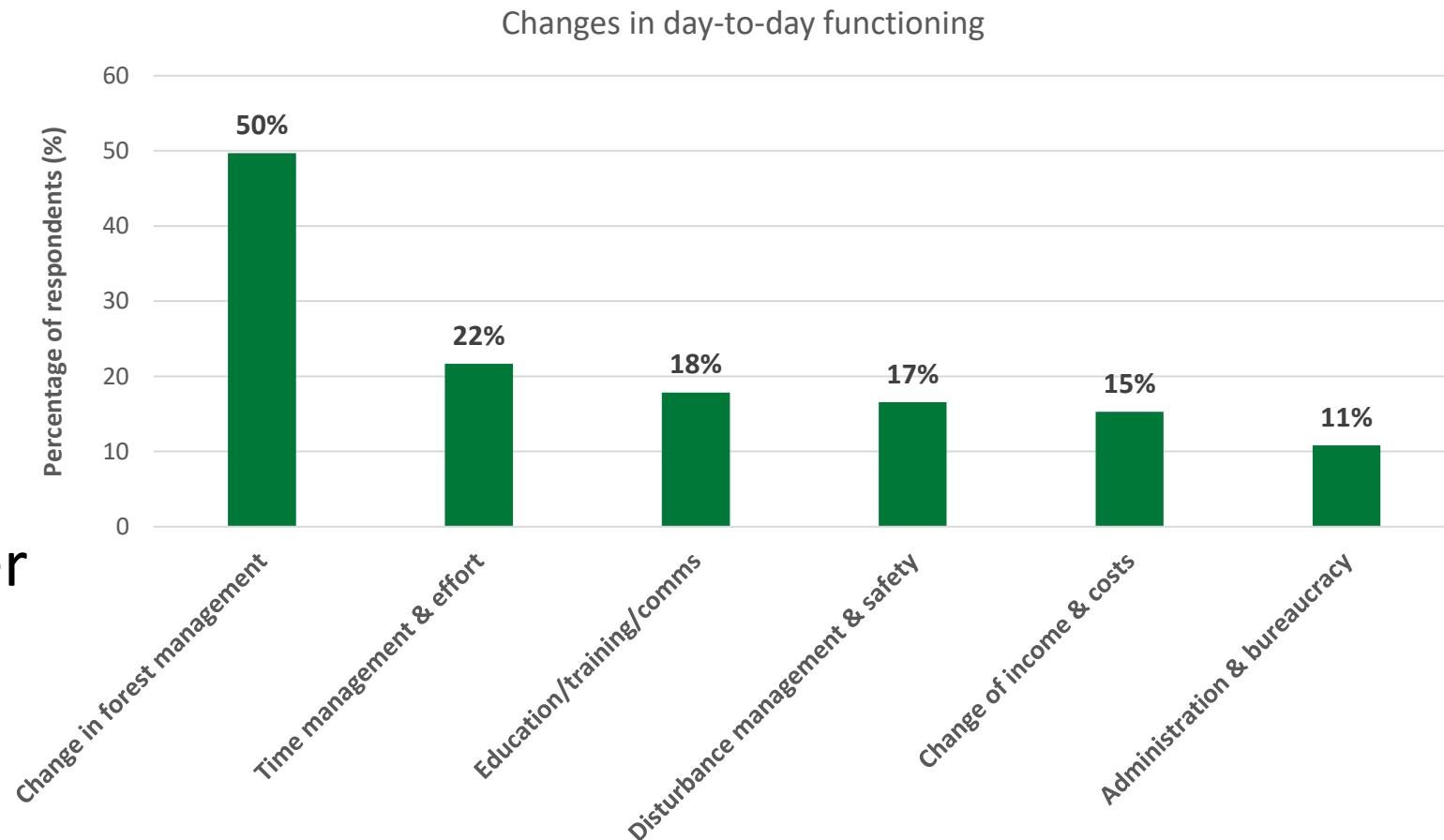
# Results: Knowledge sources used in decision-making

- Field trips/excursions most prominent
- 96% use same sources for informing biodiversity measures
- 56% think sources sufficient for decision-making



# Results: changes in day-to-day functioning from implementing CCA

- Change in forest management most prominent
- Time management high in Cont compared to other regions
- Change in management high in Atlantic compared to other regions



# Brief summary of findings

- Most forest enterprises impacted by climate change & implement CCA measures
- Measures are diverse & vary across biogeographical regions
- Lack of capacities & resources strongest driver of challenges
- More synergies > conflicts with biodiversity conservation
- Excursions used most for decision-making but may not be sufficient
- Most prominent change from implementing CCA is the change in the management itself



Thank you!  
Question and suggestions are welcome

[lyla.obrien@efi.int](mailto:lyla.obrien@efi.int)

[Integratenetwork.org](http://Integratenetwork.org)

