Knutzen F., Averbeck P., Haustein K., Frör O., Groth M., 2025. A case study on forest practitioners' perspectives on climate extremes: consensus on impacts and conflicts in responses.

Table S1 Of the total of over 1000 mentions assigned to the 28 stakeholders the 6 most frequently mentioned per stakeholder were identified (i.e. a total of 28 x 6 = 168). These are presented separately for the two groups according to the stated primary objective of the stakeholders (i.e. each 84 of the FWP group and the FPR group).

Category	Topic mentioned	FWP (%)	FPR (%)	Total
Climate extremes		21.4	22.6	22.0
	Drought	10.7	11.9	
	Storm	6.0	6.0	
	Heat	3.6	3.6	
	Heavy rain	1.2	1.2	
Tree species		23.8	16.7	20.2
	Spruce	9.5	2.4	
	Beech	2.4	7.1	
	Foreign species	4.8	3.6	
	Oak	1.2	2.4	
	Pine	2.4	0	
	Douglas fir	2.4	0	
	Marginalized species	1.2	1.2	
Silvicultural response		13.1	19.0	16.1
	Forest management	3.6	6.0	
	Species mixture	4.8	2.4	
	Species selection	1.2	4.8	
	Rejuvenation	3.6	1.2	
	Close to nature	0	3.6	
	Forest set-aside	0	1.2	
Impacts		11.9	9.5	10.7
	Calamities	7.1	6.0	
	Forest fire	2.4	2.4	
	Occupational safety	2.4	1.2	
Socioeconomics		22.6	15.5	19.0
	Economy	7.1	6.0	
	Wood	6.0	6.0	
	Hunting / Game	3.6	1.2	
	Legislation	2.4	0	
	Forest owners	1.2	0	
	History	1.2	0	
	Conflict	1.2	1.2	
	Sufficiency	0	1.2	
Ecology		0	4.8	2.4
	Neobiota	0	2.4	
	Epigenetics	0	1.2	
	Deadwood	0	1.2	
Climate change (CC)		7.1	11.9	9.5
	CO_2	2.4	3.6	
	Climate information	2.4	3.6	
	CC adaptation	1.2	3.6	
	CC impact	1.2	1.2	

Structure of CS4eXtremes Stakeholder Interview Guidelines Introduction

The following provides a structured framework for conducting stakeholder interviews for the CS4eXtremes project. The interviews aim to explore stakeholders' perceptions of climate extremes, their impacts, and related adaptation measures. The document is divided into key sections with detailed guidelines for conducting the interview effectively.

1. Interview Introduction

1. Welcome and Consent:

- Thank the participant for agreeing to the interview.
- Explain that the interview will be recorded for optimal analysis and confirm their consent. Assure them that recordings will remain confidential, and any published data will be anonymized.
- Offer the option to pause or stop the recording upon request.

2. Introduction of the Team and Project:

- Introduce the CS4eXtremes team members (interviewer and note-taker).
- Provide a brief overview of the project's goals, emphasizing the investigation of how climate extremes impact forests / forestry.
- Clarify that this interview focuses on understanding practical relevance and experiences in the stakeholders' regions.

2. General Questions

1. Stakeholder Background:

- Please introduce yourself, your organization, and your position.
- Could you describe your specific responsibilities and tasks?
- Could you describe the forest you are responsible for?

2. Main Objectives in Forestry Work:

- What is the primary purpose of your forestry activities? (Probe further to understand whether it is production-oriented, conservation-focused, or recreational).

3. Climate Change Perception

1. Information Sources:

- How do you stay informed about climate change? What sources of information do you use?

2. Scientific Consensus:

- What is your understanding of the consensus among experts on the anthropogenic causes of climate change?

3. Future Projections and Information Needs:

- What is your stance on recommendations based on climate models and projections?
- What additional information would you find helpful? In what format would you prefer to receive it?

4. Climate Extremes

The questions are intended more as suggestions to initiate a discussion about the respective climate extreme and are not strictly addressed in order.

4.1. General Relevance

- The project focuses on droughts, heatwaves, storms, and heavy rainfall. Are these events relevant to your work? Which of these is particularly critical for you?
- Importance of parameters such as frequency, duration, and intensity for each event type.

4.2. Heatwaves

- Key concerns: Duration, average temperature, peak temperature, and frequency.
- Critical thresholds: At what point do heatwaves become problematic (e.g., specific temperatures or duration)?
- Trends and Observations:
  - Long-term trends in heatwave frequency and intensity.
  - Observed impacts, such as stress reactions (e.g., leaf shedding, crown thinning, biomass reduction).
  - Connection to forest fires and insect infestations.
- Future Expectations: What do you foresee as the impacts of more frequent and intense heatwaves?

4.3. Droughts

- Key concerns: Duration, water availability, and frequency.
- Critical thresholds: At what point do you define drought, and when does it become critical?
- Specific timing: Periods when droughts are most impactful.
- Trends and Observations
- Future Expectations: Anticipated impacts of more frequent and severe droughts.

4.4. Heavy Rainfall

- Key concerns: Intensity (e.g., mm/h), duration, and frequency.
- Critical thresholds: At what point do heavy rains become problematic?
- Observations
- Future Expectations: Anticipated impacts of more frequent and intense rainfall.

4.5. Storms

- Key concerns: Maximum wind speed, storm duration, and frequency.
- Critical thresholds: At what wind speeds do storms become problematic?
- Observations
- Future Expectations: Anticipated impacts of more frequent and severe storms.

5. Adaptation and Response

From this point onward, the discussion can become more open and flexible. The following questions are suggested as possibilities to guide the conversation, but the participant should feel free to focus on areas they find most relevant or pressing:

- **Current and Planned Adaptations:**
  - What adaptation measures have you implemented or planned for climate extremes?
  - Do you anticipate the need for further adjustments to address increasing intensity and frequency of extreme weather?
- **Adaptation Strategies:**
  - Are your strategies more proactive or reactive? Active or passive? Probe for specific examples.
- **Heatwaves:**
  - How do you address wildfire risks?
  - Are silvicultural practices adapted to reduce heat stress or its impacts?
- **Droughts:**
  - Adjustments in planting density, species selection, or timing.
  - Implementation of irrigation, if feasible.
- **Heavy Rainfall:**
  - Measures to prevent erosion and soil compaction.
  - Use of water-tolerant species or structural adaptations like buffer zones.
- **Storms:**
  - Adjustments in tree height, species composition, or stand structure to reduce windthrow risks.

6. Open Discussion

- Reflect on earlier questions and allow for free-flowing dialogue.
- Explore gaps: What do you need to respond better to climate extremes?

Recommendations for other colleagues for interviews?
Thank you