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# Exploring regional stakeholder needs & requirements for extreme weather event attribution

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## Motivation & background

### Motivation

Extreme event attribution has increasingly received attention in the scientific community. Yet does it also serve decision-making at the regional level where much of the climate change adaptation & mitigation takes place? So far, there is little known about the requirements of regional actors for extreme event attribution. We therefore analyze these at the example of regional decision-makers concerned with storm surges at the German Baltic Sea and heat waves in the Greater Paris area within the EUCLEIA Project.

### Eucleio Project

Advancing Extreme Event Attribution Research is at the center of the EU FP7 project EUCLEIA. This field of research is meant to assess the extent to which single weather-related extreme events have changed due to human influences on climate with probabilistic statements. To develop *well verified, understood, relevant and useful* EUCLEIA products, we consult regional decision-makers, insurances, the media, scientists, and the general public about their needs and requirements in terms of Extreme Event Attribution.

## Methods & concept

### Interviews with regional stakeholders

- ❖ from civil society, education, public & private sector
- ❖ 9 in-depth interviews in Germany, 7 in-depth interviews in Paris

### Survey of mayors

- ❖ addressing 1109 mayors in the Baltic Sea region
- ❖ 165 answers received (15% response rate)

### Focus group workshops with regional stakeholders

- ❖ one in Germany, two in Paris
- ❖ from public and private sector stakeholders engaged in assessing, mitigating & communicating extreme event- & climate change-related risks

We build on Cash et al.'s (2003) approach for evaluating information services →

**Assessing credibility** → indicates why extreme event attribution might be perceived as '*well verified*'

**Addressing salience** → reveals what and why extreme event attribution results might be '*well understood and relevant*'

**Including legitimacy** → to produce, assess & disseminate information with stakeholders & develop services tuned to the values and norms of end users

## Findings from the stakeholder engagement

Extreme event attribution was perceived to be

- ❖ most useful to societal climate change discourses and awareness-raising
- ❖ of little relevance to local policy-making and planning – e.g. only 2% of mayors ask for more information on human extend & physical basis of CC (*Baltic Sea*)

It was not mentioned to be relevant to risk assessment, adaptation planning & international negotiations.

Potential fields of application		Mentioned
Baltic Sea case study	Paris case study	
Climate change mitigation	Public climate change discourse	frequently
Public climate change discourse	Public awareness-raising	
Public awareness-raising	Political leverage	
Insurances	Insurances	few times
Compensation mechanism	Basis for better scenarios Infrastructure design	
Civic participation, political leverage, administration, university, scenarios, coastal protection, spatial planning	Market identification and development	rarely

Mentioned fields of application (according to interviewees and workshop participants, order based on mentionings)

### Credibility concerns:

- ❖ tolerance of uncertainty often rather low
- ❖ serves as argument whether it is of benefit or not (*in awareness-raising & urban planning – Baltic Sea case*)
- ❖ most relevant criterion in long-term planning (*particularly for large investments like coastal protection*)
- ❖ credibility is often associated with the quality of the relationship with the information provider that was established in the past (*Paris & Baltic Sea case*)

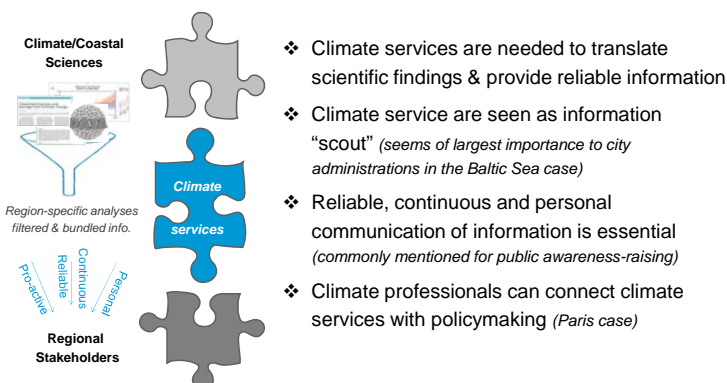
### Salience-related requirements:

- ❖ should be intuitively accessible, not too complex, descriptive, and in native language
- ❖ seems of little relevance *when* a extreme event attribution report is provided
- ❖ most important appeared to be the link to regional problems, vulnerabilities, and impacts (*e.g. translate climate change into "euro figures", Paris case*)

Credibility-related criteria
Small statistical uncertainties
Transparency reg. uncertainty
Solid process/ methodology
Reliable source/ institution
Reliable data basis
For all major extreme events
Salience-related criteria
Link to relevant problems
Value of results
Regional proximity
Intuitive accessibility
Comprehensibility
Practicality
Time of availability

Mentioned requirements in the context of extreme event attribution (according to interviewees and workshop participants)

### The perceived role of climate services



## Conclusions for developing climate services

**Understanding** how event attribution can serve stakeholders requires to be aware of the mandate, background & needs of people (*also beyond event attribution*)

**Assessing the needs of potential users** showed that:

- ❖ EUCLEIA products should be from a trusted "honest broker", tailored to stakeholders' specific concerns, and rather later but with smaller uncertainty
- ❖ EEA should be part of more integrative statements where anthropogenic climate change is one of the factor explaining shifts in impacts

→ **Climate services** can provide an interface between science and practice. They should not be misunderstood as one-directional communicator from science to the stakeholders, but facilitate & make use of a continuous dialogue

Funding and Partnerships:

