



C8: Socio-economic consequences of climate extremes and compound impacts

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Summary of themes covered in workshop

- Understanding of the weather and climate system by now has advanced to a level where global impacts yet on local resolution can be studied. Do we have yet a balanced view on hazard, the role of socio-economic exposure and vulnerability to support local decision-making?
- What are compound impacts? Definition and relevance?
- What are relevant and adequate metrics to quantify climate extremes?

Most controversial question that came up in this workshop?

- Can global modeling (at all) guide local decision making?
- Does modeling improve policy making?

Results of the discussion

Metrics:

- There is no unique way to quantify impact of climate extremes: the most appropriate metric(s) depends on audience and decision making context.
- Costing everything in dollar values is for sure no option, despite temptations by some players to 'impose' a single and 'simple' unified metric. Any such single metric implies strong normative (pre-)judgements and neglects or at least downplays many other (admittedly hard to quantify) effects.

- Some participants were of the opinion that (natural) science should inform decisions but abstain from normative (judgements). Others were of the strong opinion that already such undertakings are never free of normative decisions, like e.g. the decision where a measuring station gets installed, what will be measured, what reported etc.

Global versus local modeling:

- Participants emphasized a strong role for global modeling to raise awareness to problem, but were divided upon the relevance for decision making (already at the global policy level).
- The need for alternative approaches and modeling exercises was stressed, to withstand for models to converge too quickly (leading e.g. to overconfidence).
- Regular and well-informed exchange was very much supported, especially model intercomparison projects.

Compound impacts:

- Does a compound impact require overlap in time and space? (E.g. if a storm's wind impact is followed by a rain event within recovery time)
- Does a single event with compound impacts also constitute a compound event? (E.g. if a flood event triggers the overflow/breaking of a dam...)

Research gaps identified

- Research on indirect effects and resilience missing on local level (example: local bridge destroyed after flood for 5 years, what is impact? Could impact foster faster rebuild?)
- Broadly speaking, local modeling efforts were perceived as missing by some participants
- Are model outputs / solution questioned for sustainability in local context?

Next steps

Local partners (local government, industry, NGOs ...) could fund local modeling approaches to provide local results, raise local problem awareness, and increase responsibility (conflict of interest of local modeling party needs to be accounted for.)

Other

NA

3-5 keywords that characterize the session

- lively exchange
- active mutual learning
- (too) broad a range of participants to get more specific on next steps