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Bundesamt für Meteorologie und Klimatologie MeteoSchweiz

# Should we really do impact forecasts? Strategic learnings at MeteoSwiss

Evelyn Mühlhofer, Severin Kaderli, Saskia Willemse

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# Why and what is IBF?

Premise: Impact-based Forecasting (IBF) & Warning increases decision-effectiveness of its recipients: it is *specific, actionable, relevant*.

Reality: IBF collides with established response routines, unclear mandates, sparse data and immature working proofs. Roll-out is slow.

Now: Reflections on a more nuanced verdict.

- I. Pilots are useful
- II. Different stakeholders, different engagement models
- III. Be pragmatic (on the product & on the beneficiary)
- IV. Manage your tools & services
- V. Deal with (no) data
- VI. Join Forces

# I. Pilots are useful

 **GVZ** GEBÄUDEVERSICHERUNG  
KANTON ZÜRICH  
[scClim project]



 **SBB CFF FFS**  
[ongoing proposals]

- What problems do they face?
- How do their operations look like?
- What skills & resources are there to collaborate?

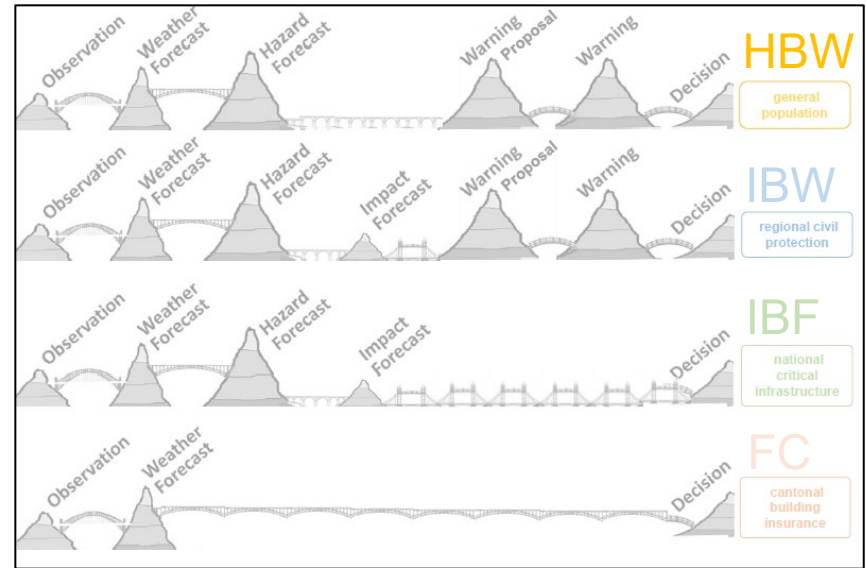
## II. Different stakeholders, different engagement models & value chains

### Engagement:

- Full Service: end-to-end support
- Empowered Operator: co-develop, then in-house ops
- Independent User: open government data

### Value Chain:

- (Impact-based / Hazard-based) Warning
- (impact-based / weather) Forecast





## III. Be pragmatic

On the beneficiary & on the product.

→ Deal with who wants to deal with it

→ Scale what scales now



# Pragmatic Beneficiary Choices

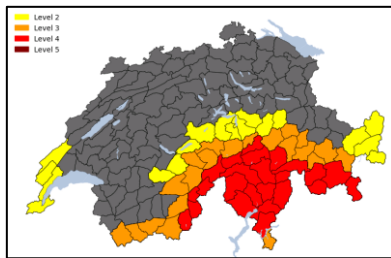
- ✓ Interested
- ✓ Relevant for warning mandate
- ✓ Nationally or cantonally active (& similar across regions)
- ✓ Have some data and/or expertise regarding effects of weather on operations. Have a budget.



# «Pragmatic Products»: Impact Proxies

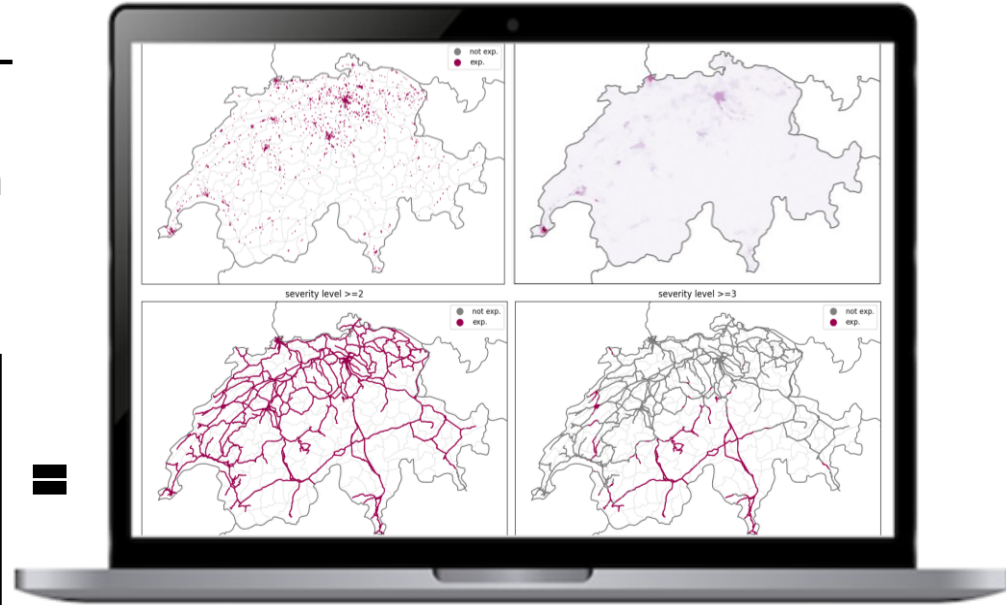
Hazard (Warning) - Exposure -  
Overlays

→ Not «impact» but an increase in  
consolidated information density;  
scalable; transferrable



Population  
Critical  
Infrastructure  
Land Use Types  
...

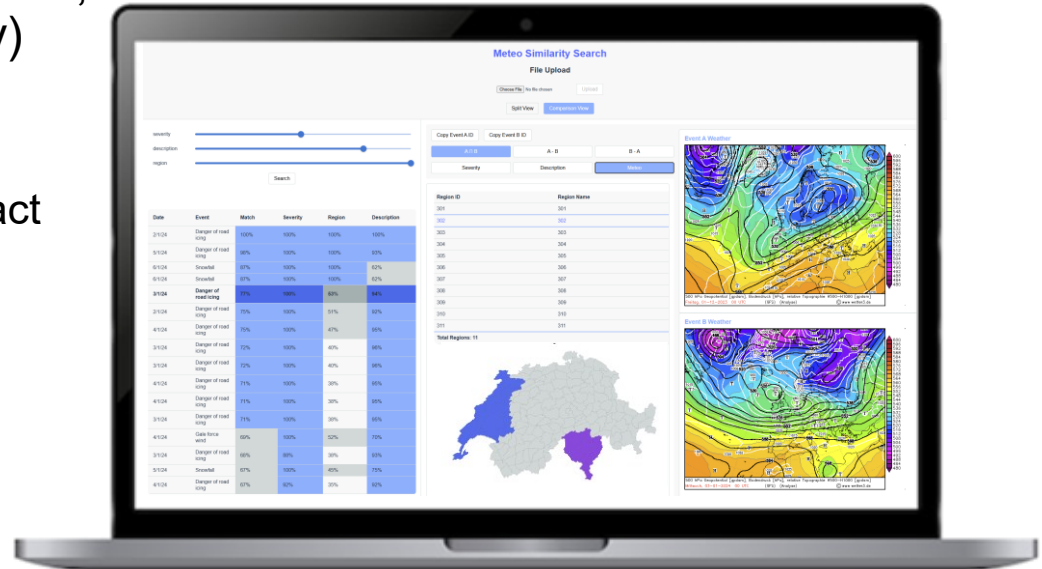
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→ no perfect substitute for impact predictions, but may still help judgement





## IV. Manage your tools & services

- Academic models vs. software going into 24/7 operational production



CLIMADA  
Economics of Climate Adaptation



podman



Jenkins



OPENSIFT

- Rapid prototyping tools vs. (static) platforms

GIN

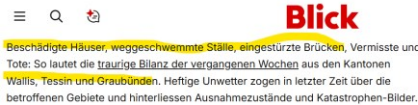




# V. Deal with (no) data

Leverage (novel) technology for data extraction methods:

- Crowd-Sourcing & AI
- Event & Impact Databases
- Does not easily replace curated data collection efforts



MeteoSchweiz

[Mahlstein et al., OSA1.5]



location	date	impact
...	...	..

EMS25, E. Mühlhofer

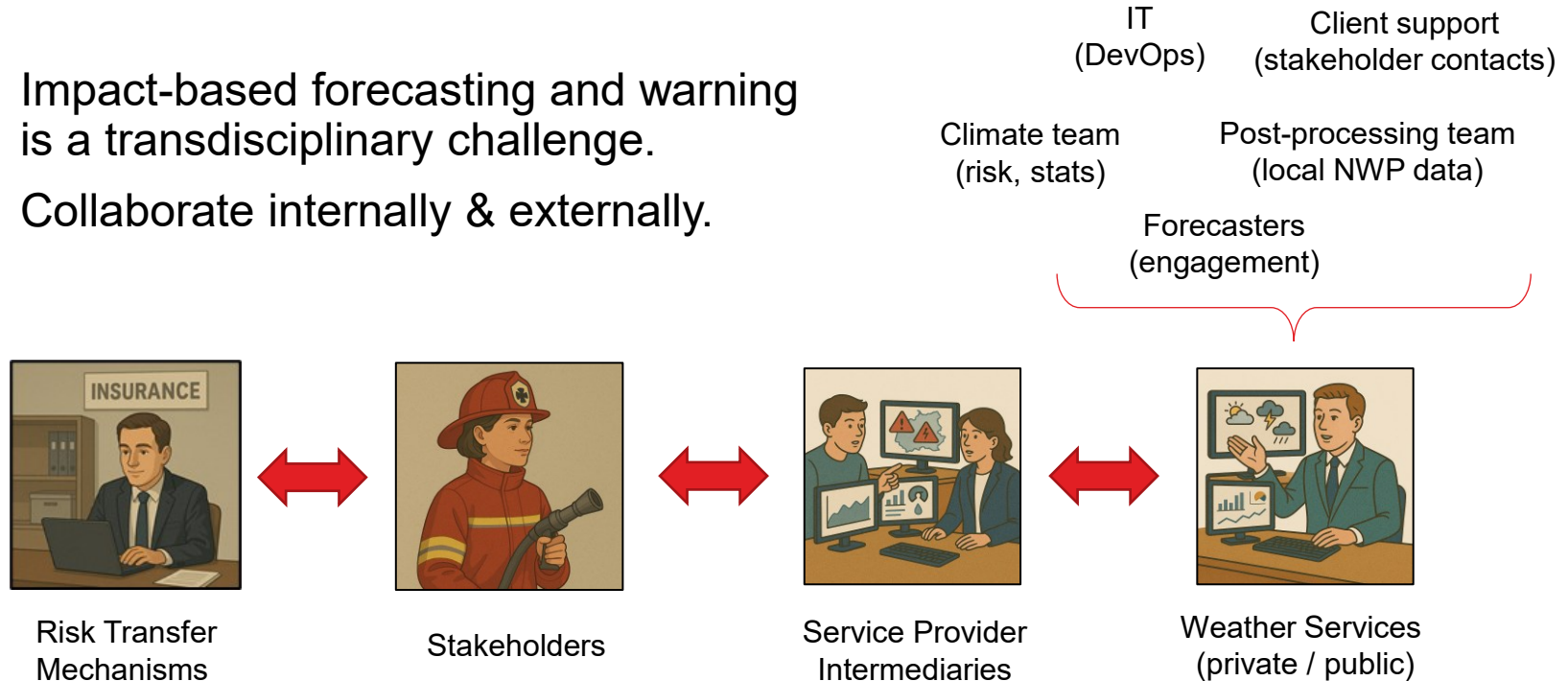
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# VI. Join Forces

Impact-based forecasting and warning is a transdisciplinary challenge.

Collaborate internally & externally.



Impact-based Forecasting is valuable, but success depends less on “better models” and more on *fit-for-purpose value chains, stakeholder co-production, data reality, and governance*.

Lesson learnt at MeteoSwiss: start pragmatically, prioritize proxies & situational awareness which scale, make a conscious choice on engagement models per stakeholder, commit resources.



# Thank you!

Evelyn Mühlhofer

Thematic Lead Impact-based  
Forecasting & Warning

[evelyn.muehlhofer@meteoswiss.ch](mailto:evelyn.muehlhofer@meteoswiss.ch)

**MeteoSchweiz**

Operation Center 1

CH-8058 Zürich-Flughafen

T +41 58 460 91 11

[www.meteoschweiz.ch](http://www.meteoschweiz.ch)



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# Summary: Reality Checks

**Data Foundations** - hazard models, exposure data, vulnerability functions, event & impact records

**Transdisciplinarity** - risk modelling, social science, meteorology, IT/DevOps

**User Needs** – engagement models, service levels, product specs

**Institutional Vision** – warning vs. forecasting, mandate, resources



Impact-based Forecasts (**IBF**)

Impact-based Warnings (**IBW**)

Impact-oriented Warnings (**IOW**)

«classic» Forecast