A participatory process to develop a people-centred warning system in Gmunden, Upper Austria

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Why do we need to develop people centred warning systems?

- To avoid delays and stalemates in the implementation of warning systems
- To anticipate or mitigate social conflicts and opposition
- To mobilize local stakeholders and raise risk awareness
- To improve decision effectiveness, credibility and legitimation
- ….

Two challenges

- To enhance “buy in” of heterogeneous stakeholders by co-producing warning system options

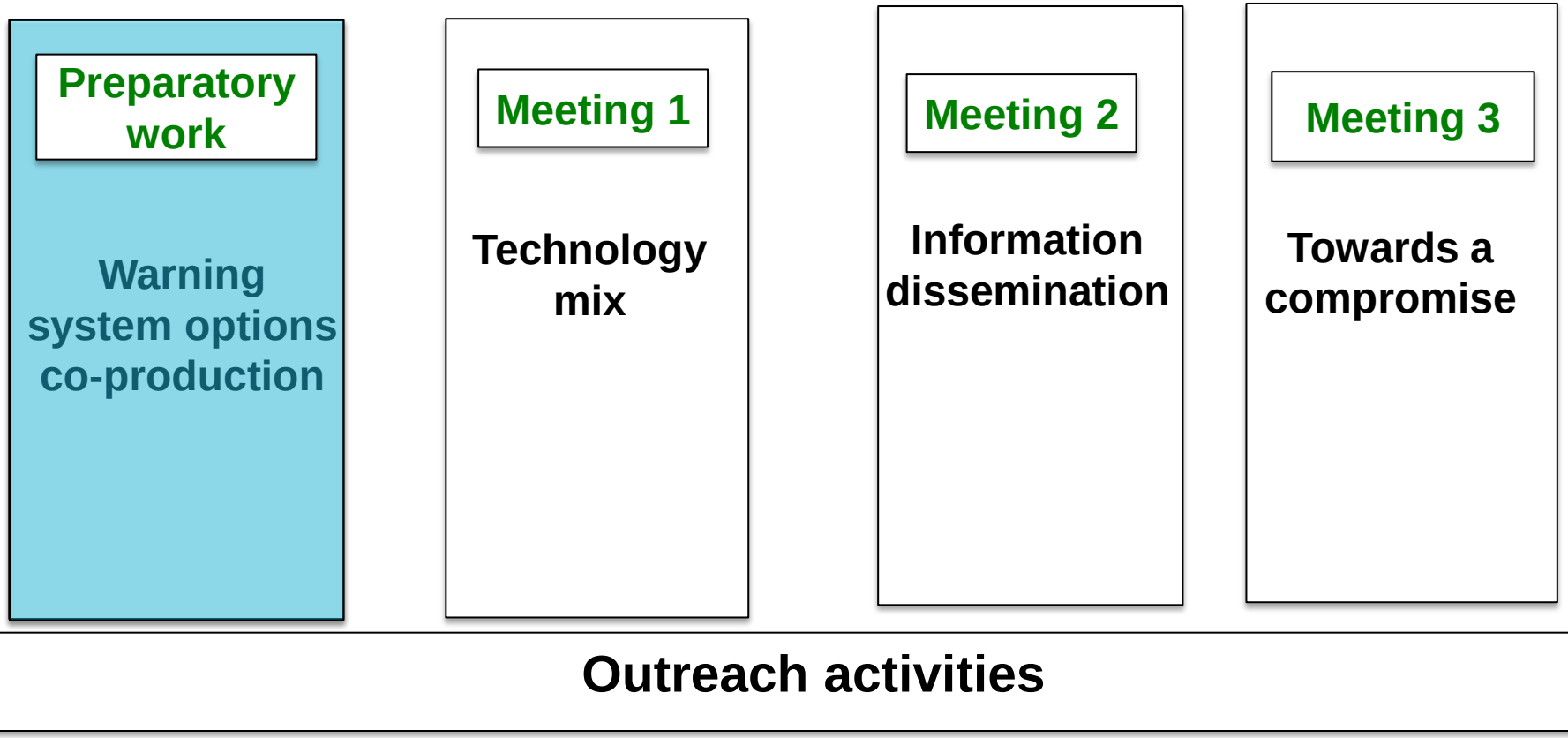
- To reach a compromise solution when stakeholders have strongly opposing views

Gmunden (Austria)

Deadlock in warning system implementation

- Most recent landslide disaster: November 2007
- 100 people and 55 buildings evacuated
- Early warning system as a preconditions for resettlement in red zone. Estimated cost: € 500,000
- Substantial investment of tax money to cope with problem concerning 100 out of 15000 residents
- Open issues: responsibility allocation for maintenance of the warning system; uncertain maintenance costs

Participatory process design



Individualistic narrative
Minimal cost warning system

Problem

Risk exaggerated relative to other risks, trade-offs between investment options

Solution

Cost-benefit analysis

(Cost-effective measures)

Outcome rationality

Hierarchical narrative
Technical expert warning system

Problem

Stalemate of process, local opposition

Solution

Top-down responsibility, expert-driven solution

(Multi-level expert system with defined thresholds)

Procedural rationality

Egalitarian narrative
Resident centred warning system

Problem

Fragility of mountain ecosystem

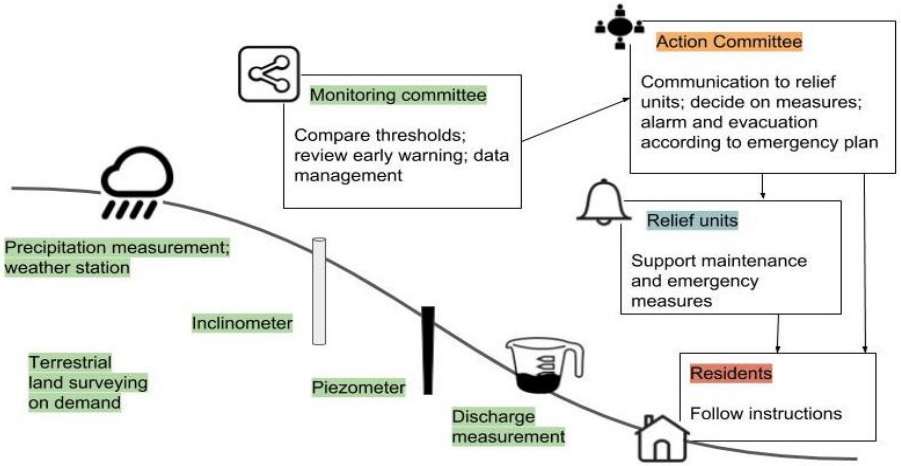
Solution

Holistic, bottom-up, community engagement, transparency

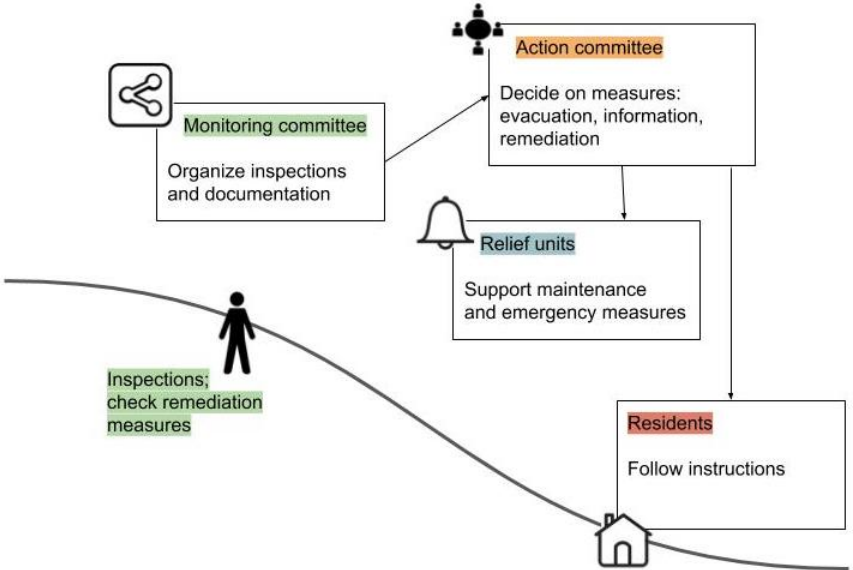
(Community owned warning system)

Moral rationality

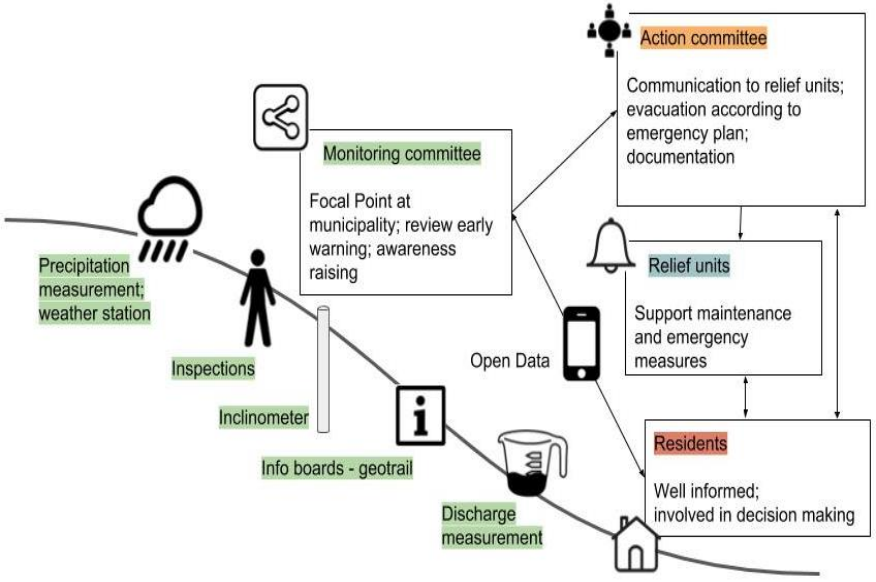
Technical expert

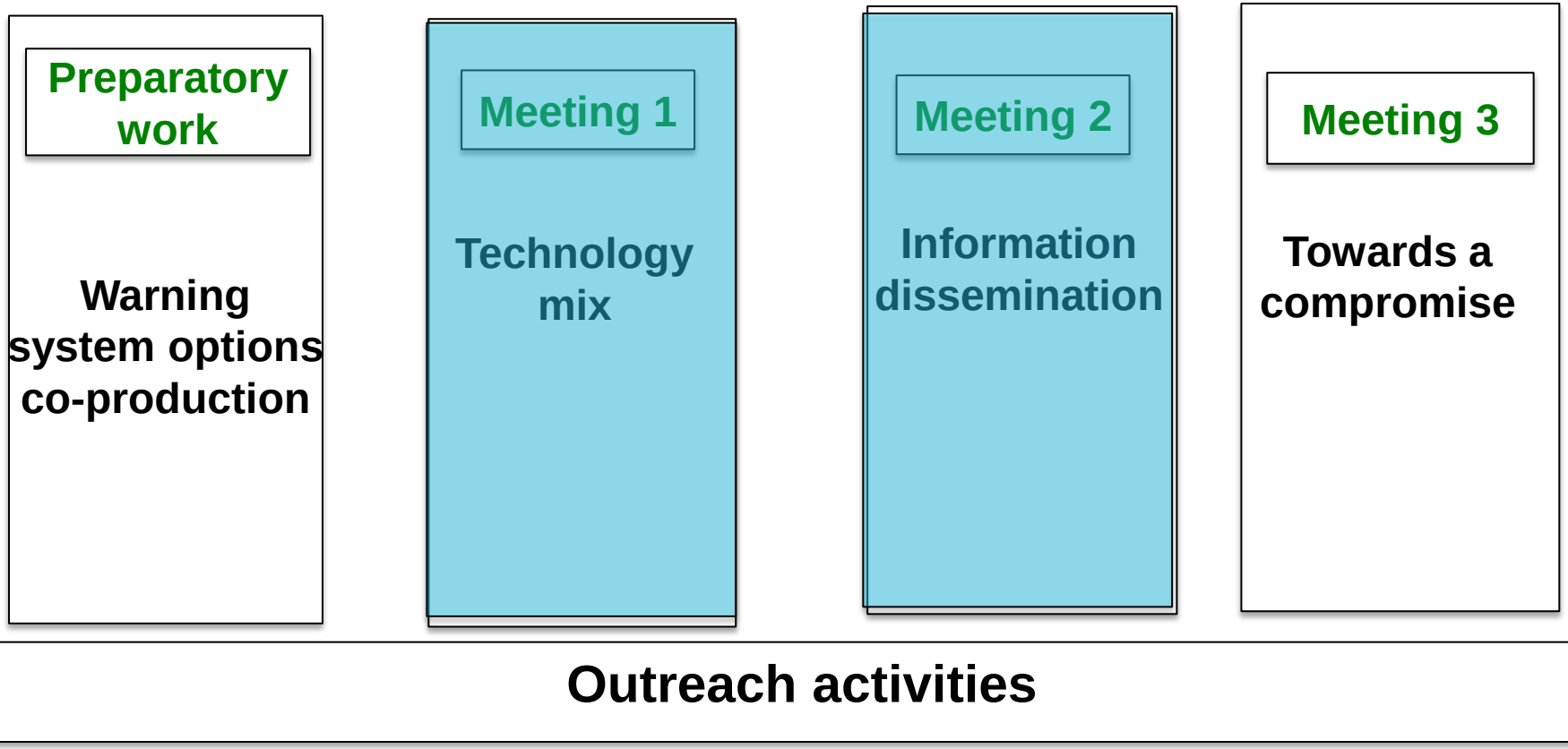


A minimal cost effective



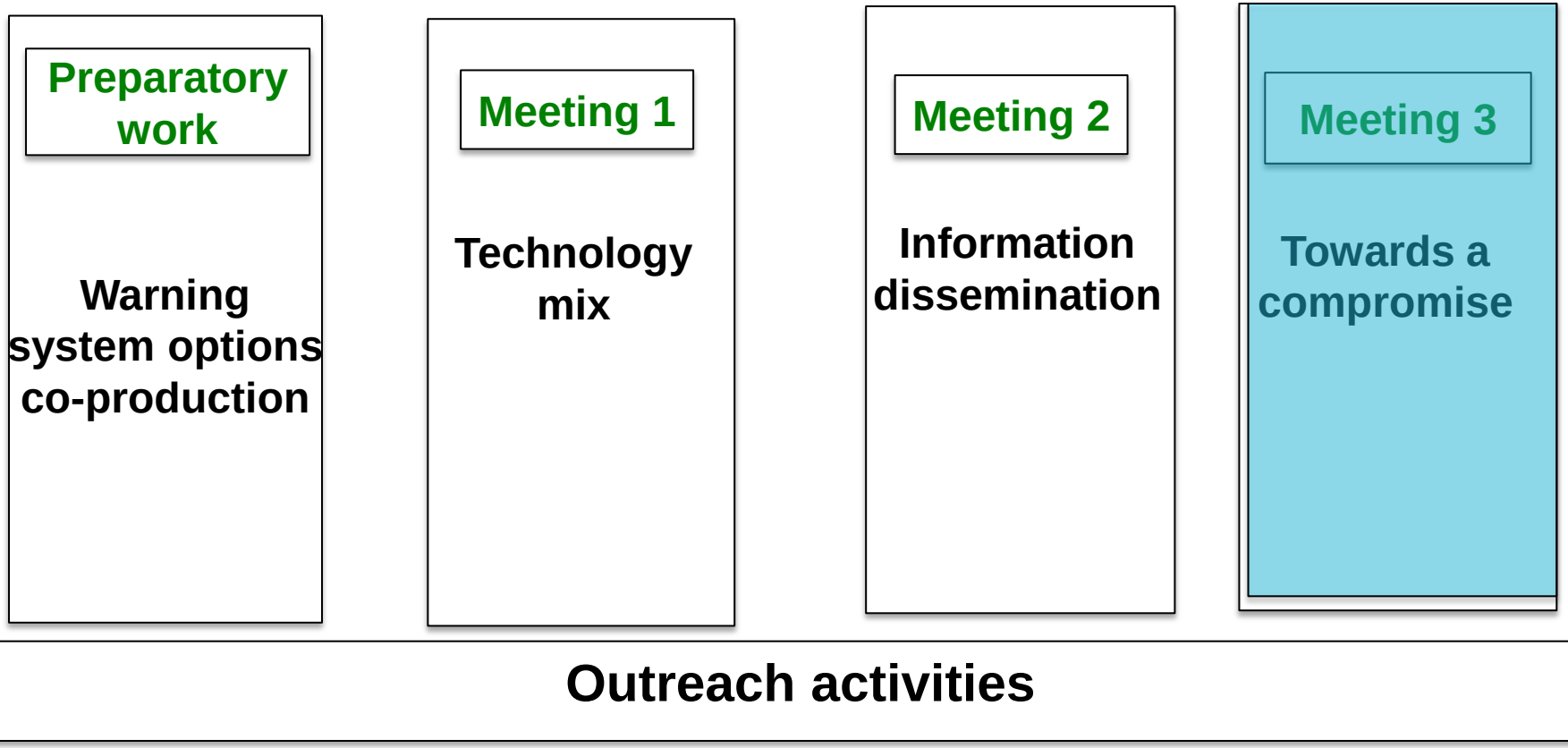
Resident centred




Preparatory work
Warning system options co-production
Meeting 1
Technology mix
Meeting 2
Information dissemination
Meeting 3
Towards a compromise
Outreach activities

Contested/most discussed issues

- Who should receive the information generated by monitoring and what is the role of experts?
- Which responsibilities could potentially be shared, and based on what legal basis, among residents and other stakeholders?
- How to raise risk awareness among residents?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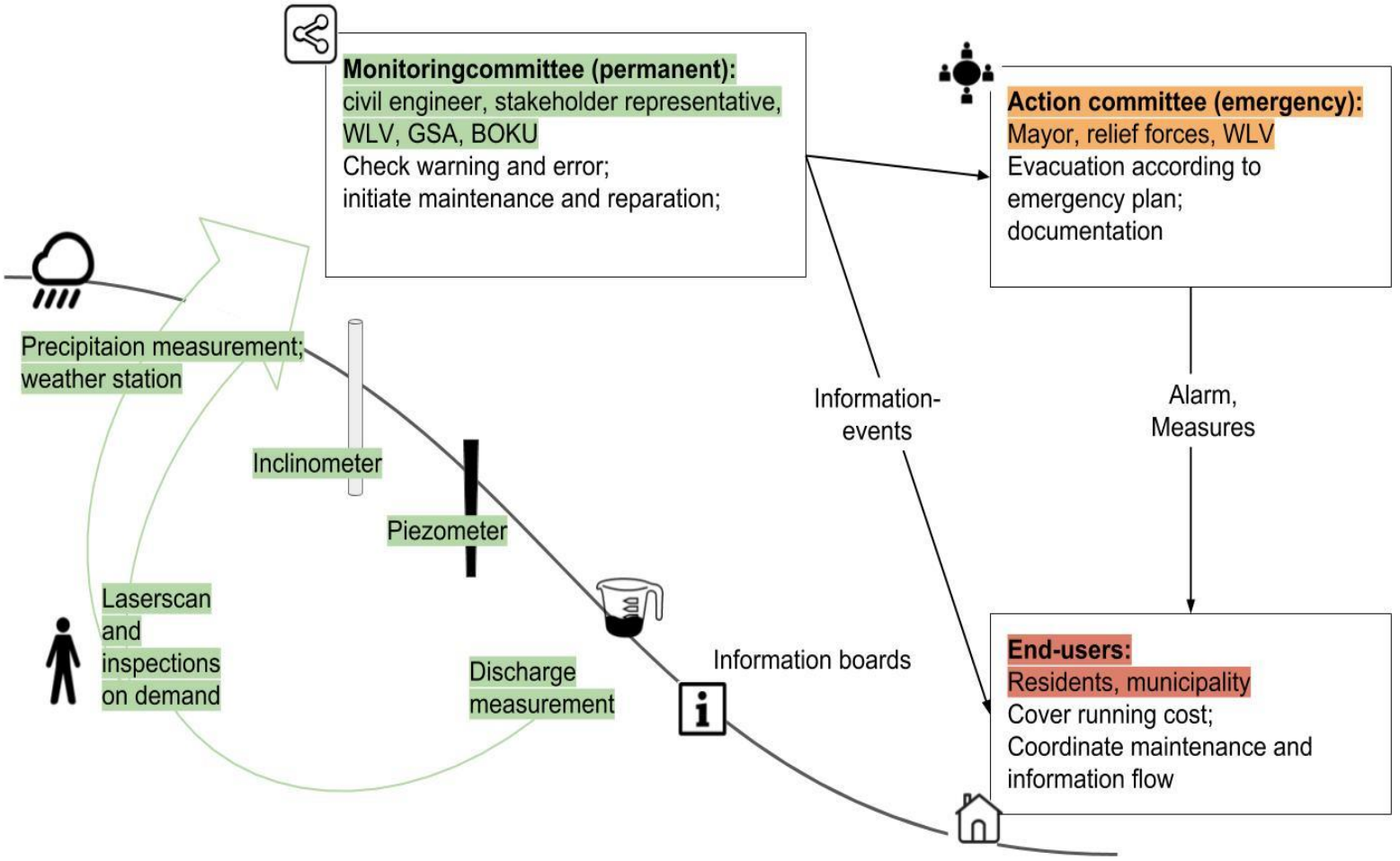
Compromise solution



Highlights

(1) Co-creation of technical policy options

- New role for experts: co-creation of options interactively based on stakeholders' perspectives

(2) Outcome acceptance

- Facilitated compromise across a co-produced NEW technical policy option

(3) Future

- New institutional/responsibility frameworks to support development and maintenance of warning systems/legal basis for shared responsibility
- Explore synergies between decision analytical techniques to support development of people centered warning systems (plural rationality theory, negotiation theory, MCA, scenarios)

Key references

- Preuner P., Scolobig A., Linnerooth-Bayer J., Ottowitz D., Hoyer S., Jochum B. (2017), “A participatory process to develop a landslide warning system: paradoxes of responsibility sharing in a case study in Upper Austria”, *Resources* 6(4): 54

- Scolobig A., Riegler M., Preuner P., Linnerooth Bayer J., Ottowitz D., Hoyer S., Jochum B. (2017), “Warning system options for landslide risk: a case study in Upper Austria”, *Resources* 6(3): 37

- Preuner P., Riegler M., Scolobig A. (2017), “Sozialwissenschaftliche Aspekte beim Aufbau eines Frühwarnsystems am Gschliefgraben”, in Wimmer-Frey, I., Römer, A. & Janda, C. (eds.), *Angewandte Geowissenschaften an der GBA*, Wien ISBN: 978-3-85316-092-3

Thanks for your attention!

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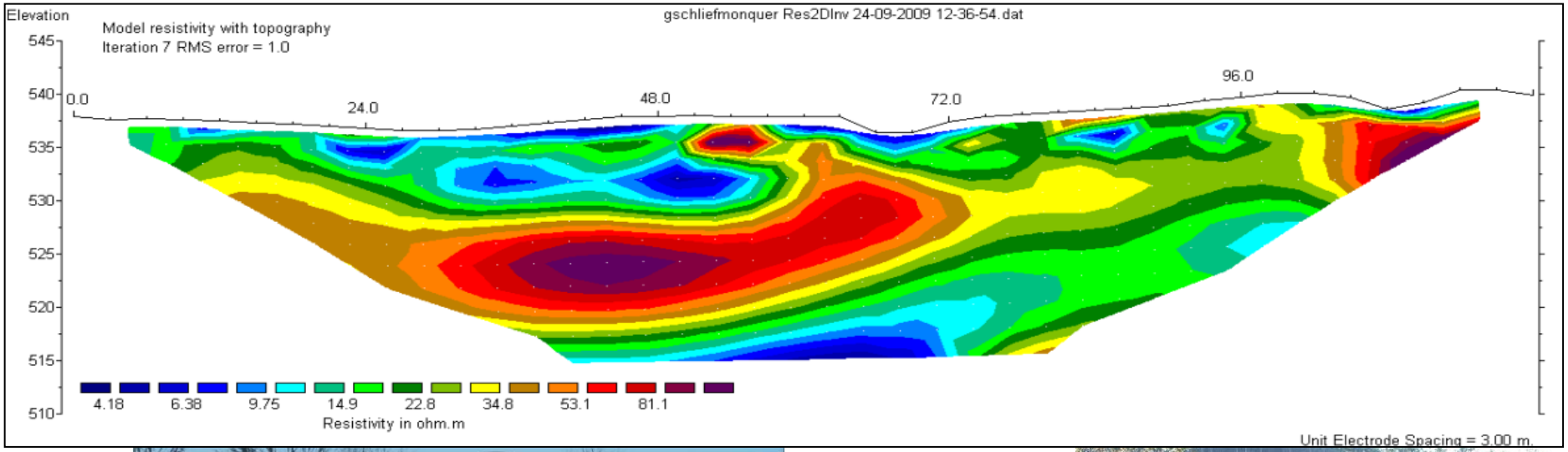
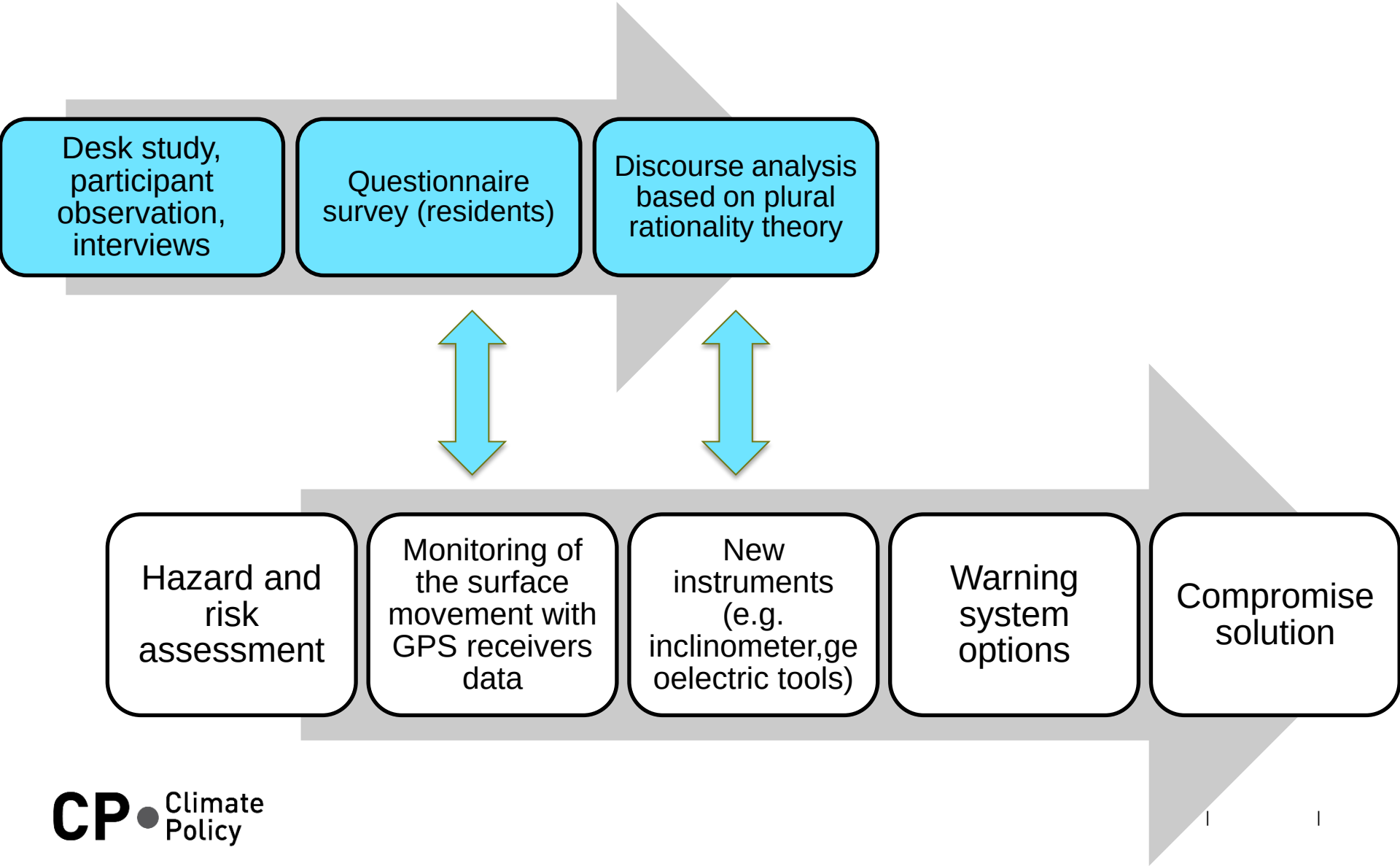
QUESTIONS?

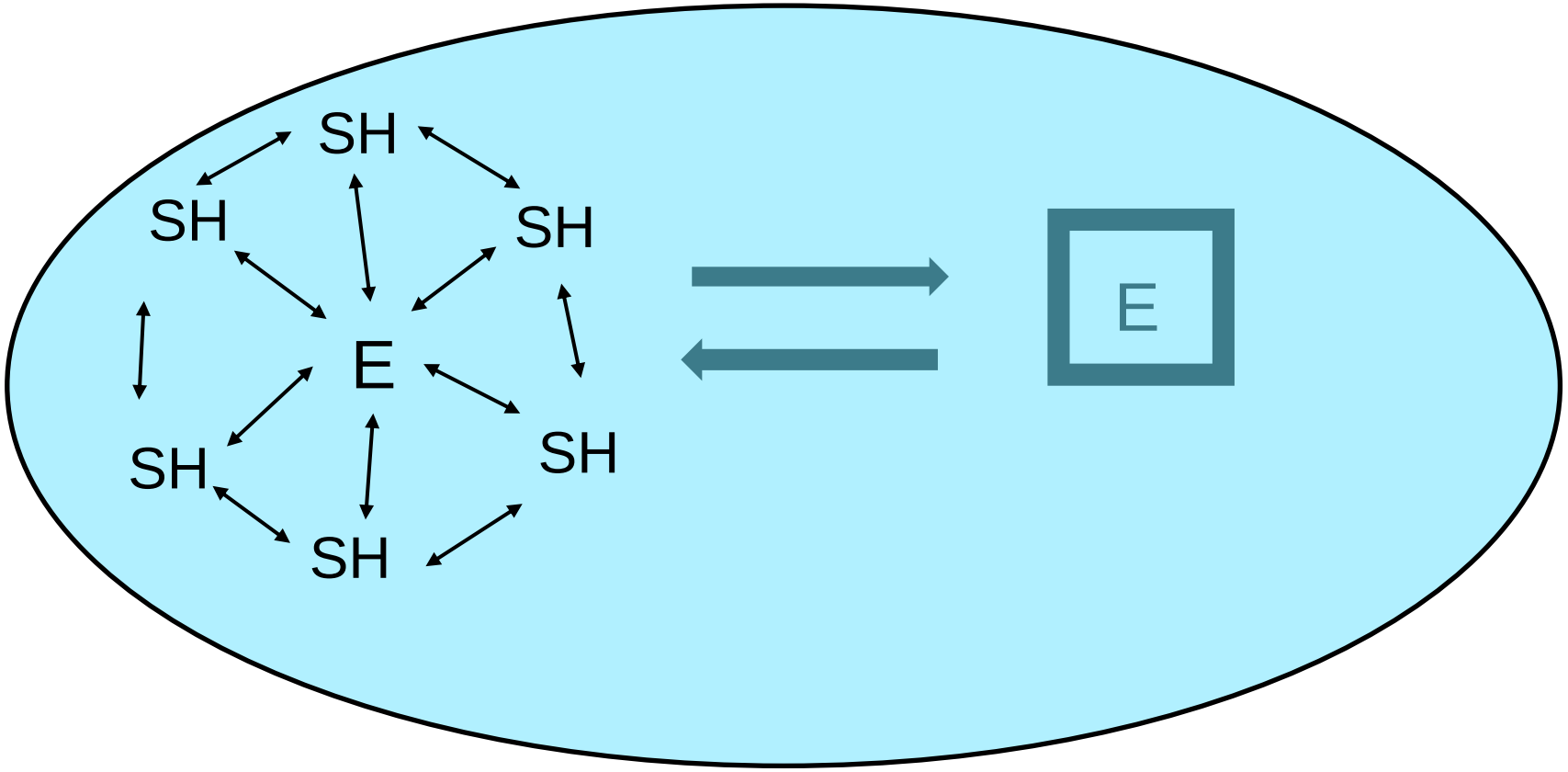
Stakeholder engagement to develop a landslide warning system in Gmunden (Austria)



CP Climate Policy

The knowledge base





E: expert/decision maker/information provider S: stakeholder

	Shared responsibility - Resident association	Public responsibility - Municipality
Role of residents	Cost contribution (approx. EUR 400 / year; varies according to land size); Participate at drills and information events; Chair of resident association: Coordination of maintenance, decision making, communication, organize drills and information events	Cost contribution (approx. EUR 400 / year; varies according to land size), Participate at drills and information events; Report observations
Role of municipality	Cost contribution (for road and infrastructure link) Emergency management	Cover cost that exceeds contributions; Coordination of maintenance, decision making, communication, drills and information events; Emergency management
Role of experts	Early warning interpretation; Data management; Maintenance	Early warning interpretation; Data management; Maintenance
Role of relief forces	Support maintenance and emergency	Support emergency
Who is responsible?	Resident association and experts for monitoring, Mayor for emergency management	Mayor and experts
Who is the end-user?	Residents	Municipality
Who is the monitoring committee?	LWZ, WLV, civil engineer, (GSA, BOKU), Chair of association*	LWZ, WLV, civil engineer, (GSA, BOKU)
Who is the action committee?	Mayor, WLV, civil engineer, Chair of association*, police, fire brigade	Mayor, WLV, civil engineer, police, fire brigade
Who benefits how?	Municipality less responsible, Residents can co-determine, Better chances for subsidies, More awareness and appreciation, Better legitimacy among non-residents	Less complex decision making for municipality, Established structure as a benefit for all, Residents less responsible