Adaptation pathways for multi-hazard risk

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Adaptation pathways

- Decision making under deep uncertainty
- sequence of actions

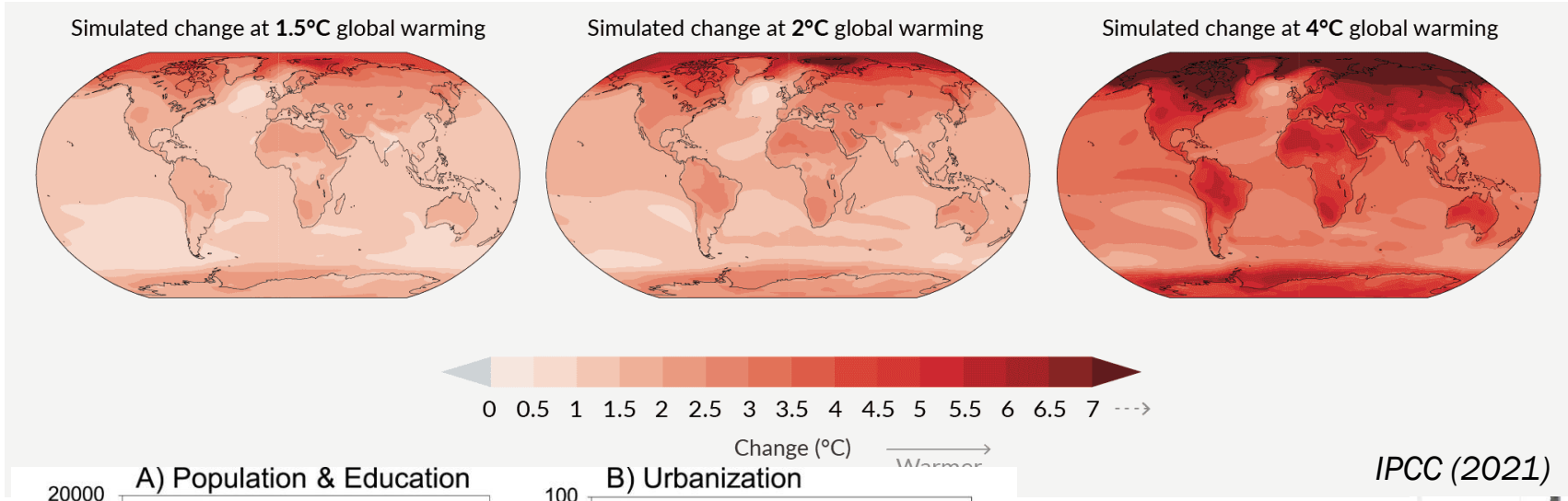
Sharing is encouraged

This presentation participates in OSPP

Outstanding Student & PhD candidate Presentation contest

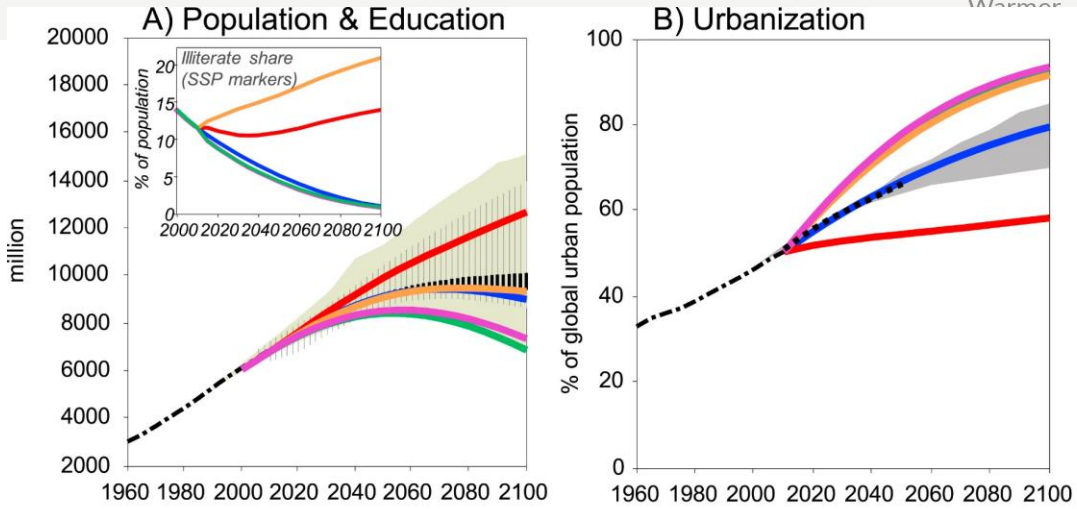
The MYRIAD-EU project has received funding from the European Union's Horizon 2020 research and innovation programme call H2020-LC-CLA-2018-2019-2020 under grant agreement number 101003276

Deep uncertainty – role of scenarios



IPCC (2021)

Rebecca Green/UNSW Sydney

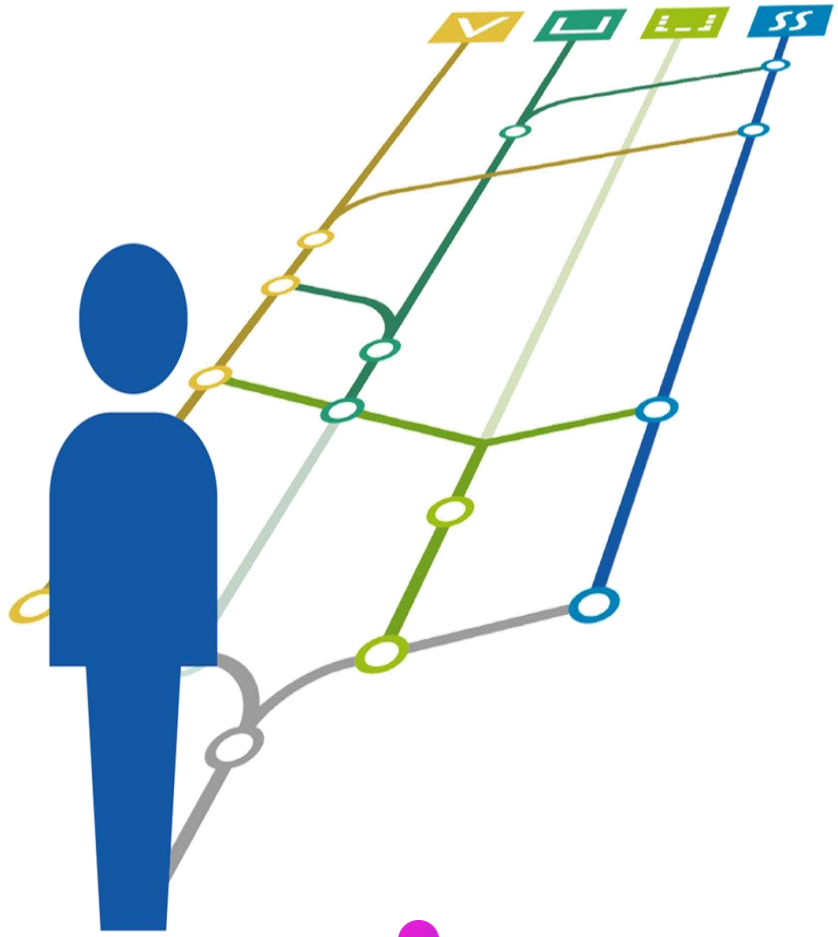


Riahi et al. (2017)

Photo: Pawel Kryscio/UCPC

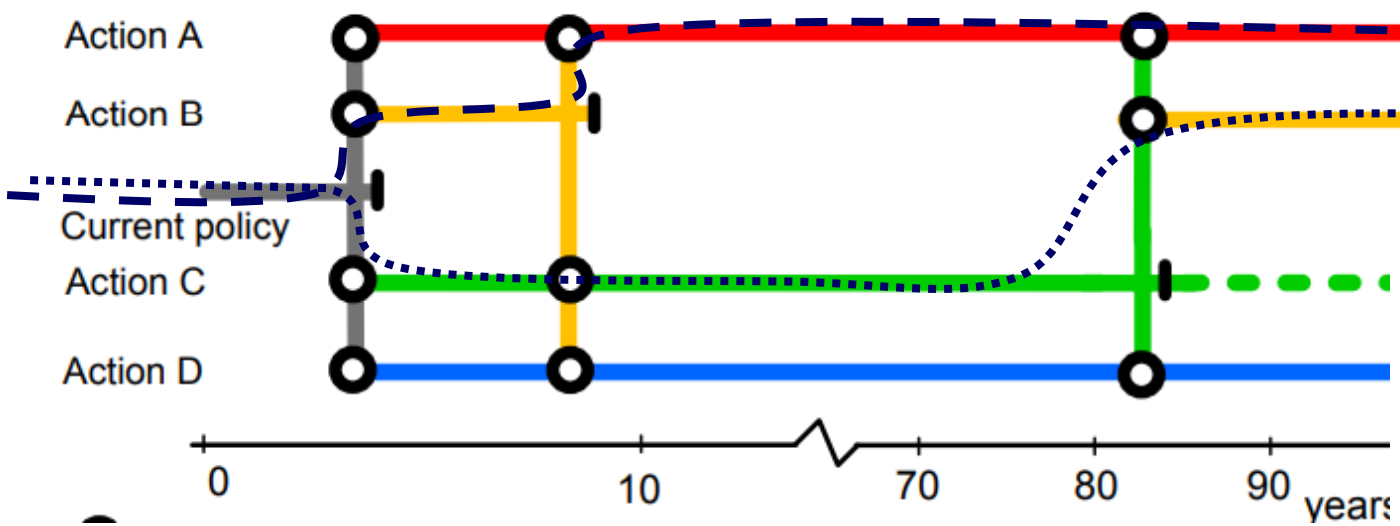
Dynamic Adaptive Policy Pathways (DAPP)

- **Systematic adaptive planning framework** that explicitly considers decision making through time
- Specifies **short-term actions** and **thresholds** beyond which additional actions are needed.
- Helps focus on important planning questions concerning **deep uncertainties**
  - Connects short-term targets to longer-term goals
  - Which actions to prioritise, which to postpone
  - Identification of potential situations of (low-)'regret'
  - Illumination of path-dependencies
  - Identification of robust and flexible strategies



Dynamic Adaptive Policy Pathways (DAPP)

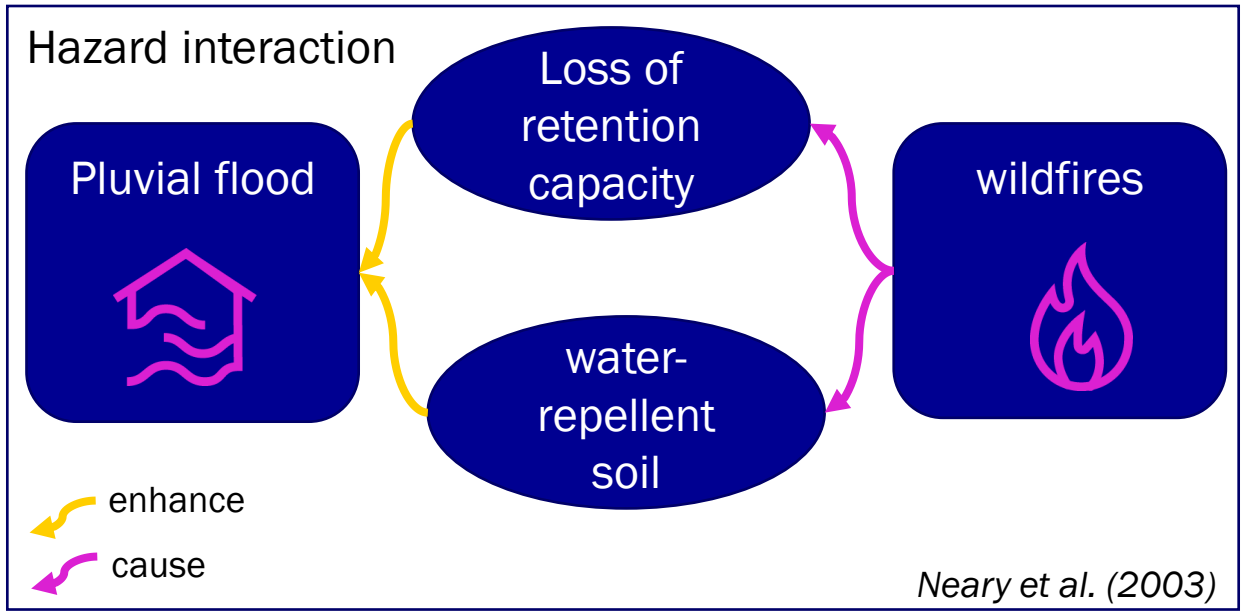
- Policy analysis approach
- Identify preferred adaptive pathways (flexible & robust)
- System thresholds → new policy action



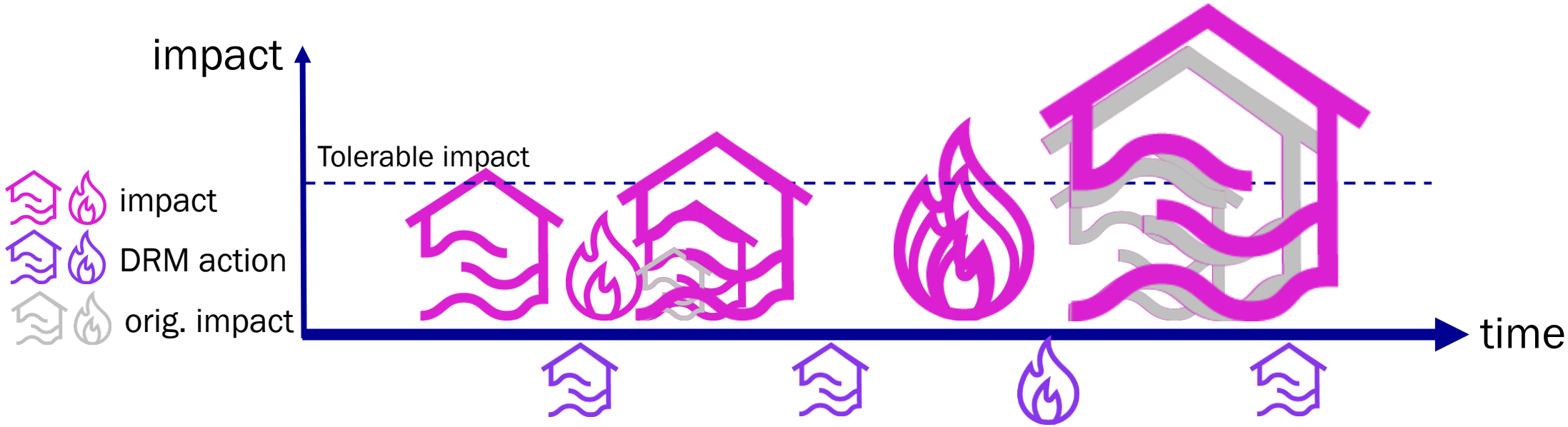
Path actions	Relative Costs	Target effects	Side effects
	+++++	0	0
	+++	0	-
3	+++	0	0
4	+++	0	0
5	0	0	-
6	++++	0	-
7	+++	0	-
8	+	+	- - -
9	++	+	- - -

Haasnoot et al. (2012)

Descriptive scenario – wildfires & floods

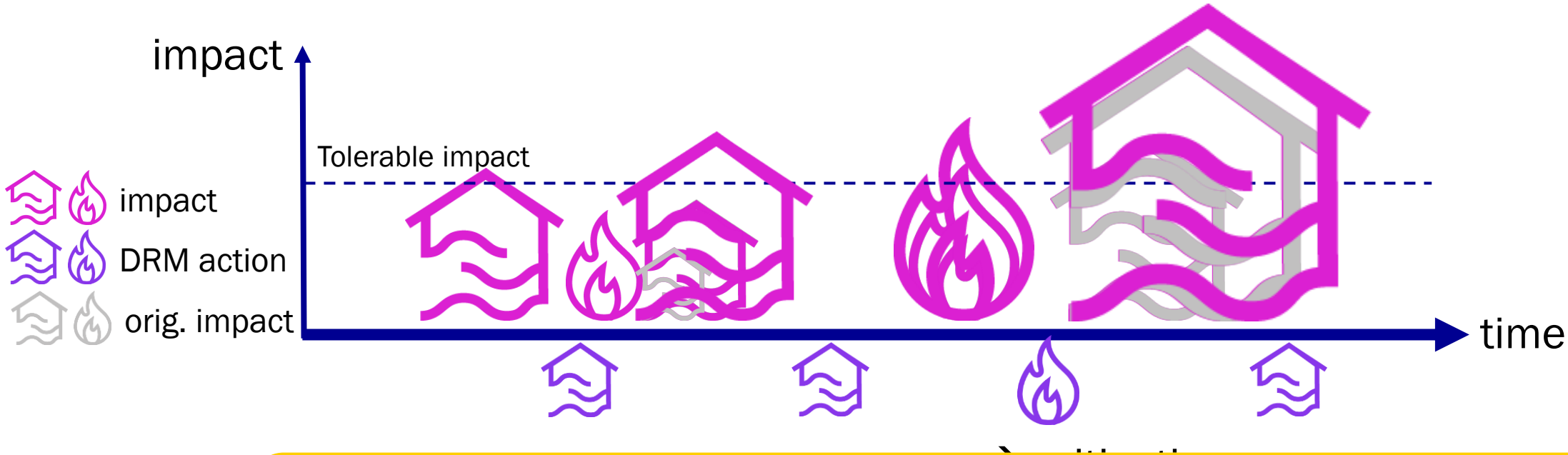


Descriptive scenario – wildfires & floods



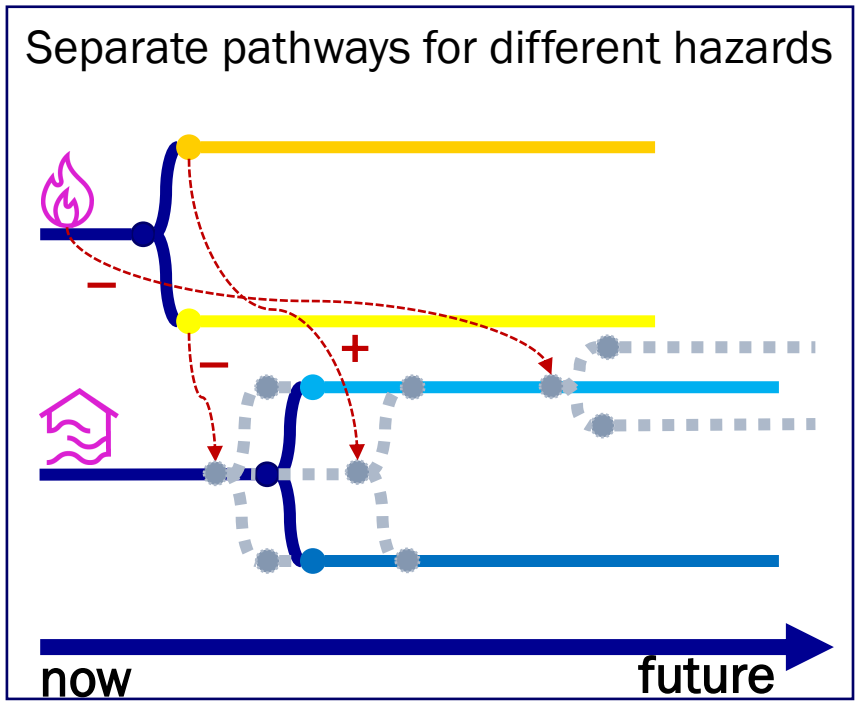
- Plausible sequence of flood events → mitigation measures
- Account for wildfires → effect flood impacts
- new mitigation measure →effects wildfire → effects flood impacts

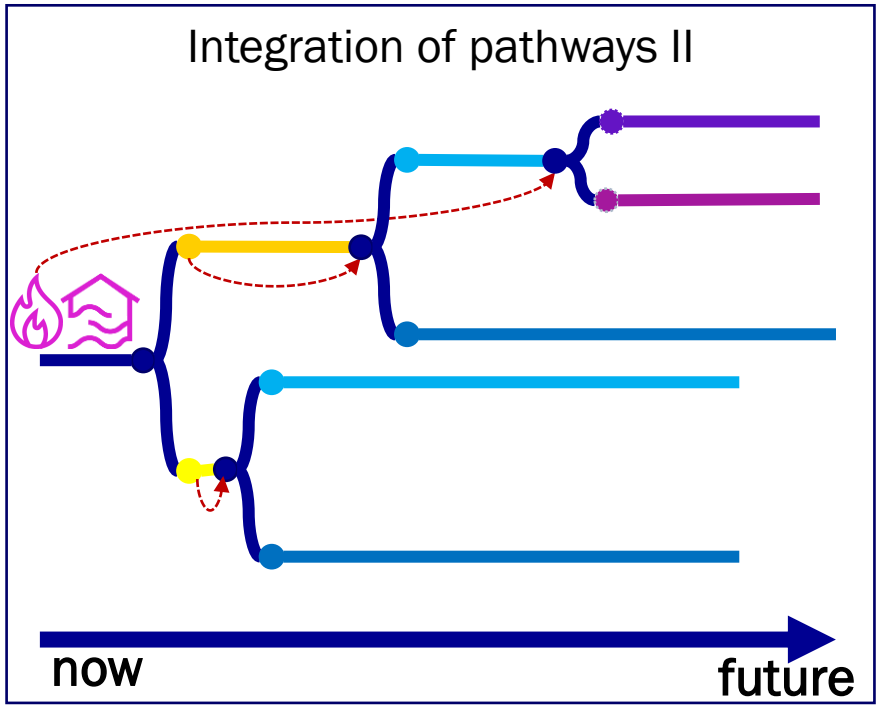
Descriptive scenario – wildfires & floods



- When new measures?
- What trade-offs and synergies of measures?
- Are measures flexible and robust?

Building up complexity





- Trade-off: -action enhances -risk
- Synergies : -action reduces -risk
- Interaction: leads to higher -risk

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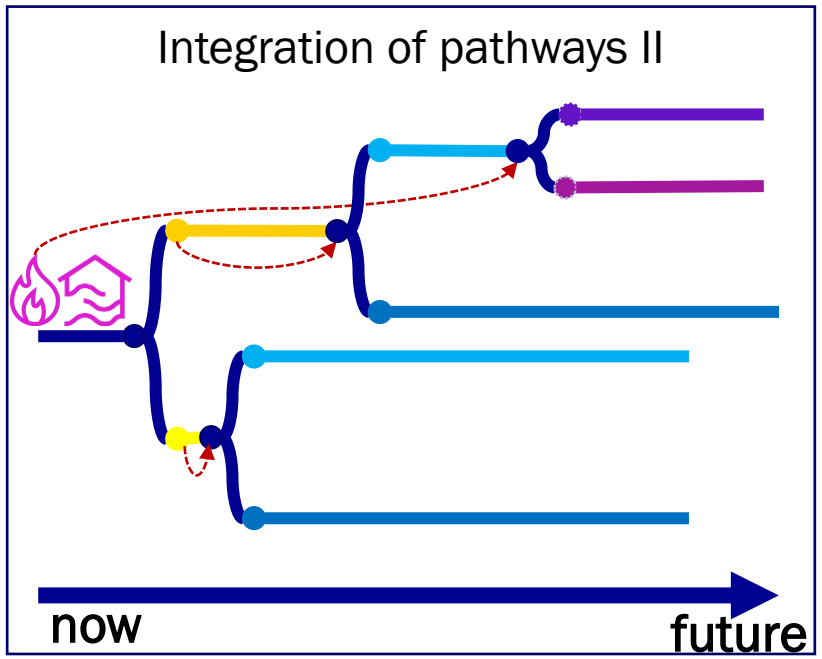
Reducing risks together

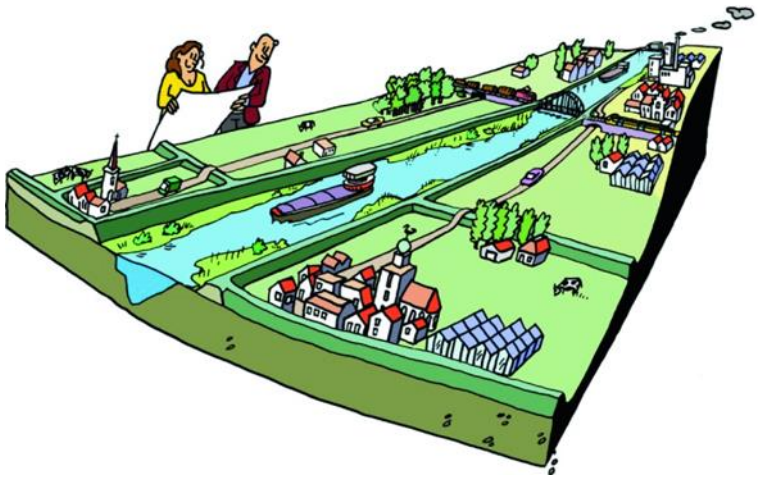
Key message

- We need to look beyond the assessment of multi-hazards and think DRM-action oriented



Outlook

- Apply conceptual framework in multi-hazard risk test case



Link to abstract

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Reducing risks together

Questions?

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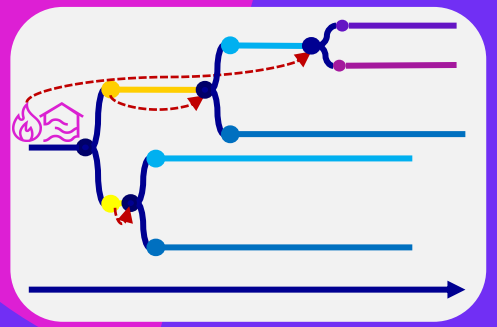
DRM for multi-hazard risk should account for

- timing of actions
- trade-offs & synergies
- deep uncertainty



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