

Guidance for climate-proofing project planning

based on Envisage-CC Experience



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“Transport & Climate Change - European Researchers Act”

• Paris, France 6. July 2015

(organizers: ETRA, IFSTTAR)

ENVISAGE-CC

ENVironmental Impact assessment Satisfying Adaptation Goals
Evolving from Climate Change

Project-Idea



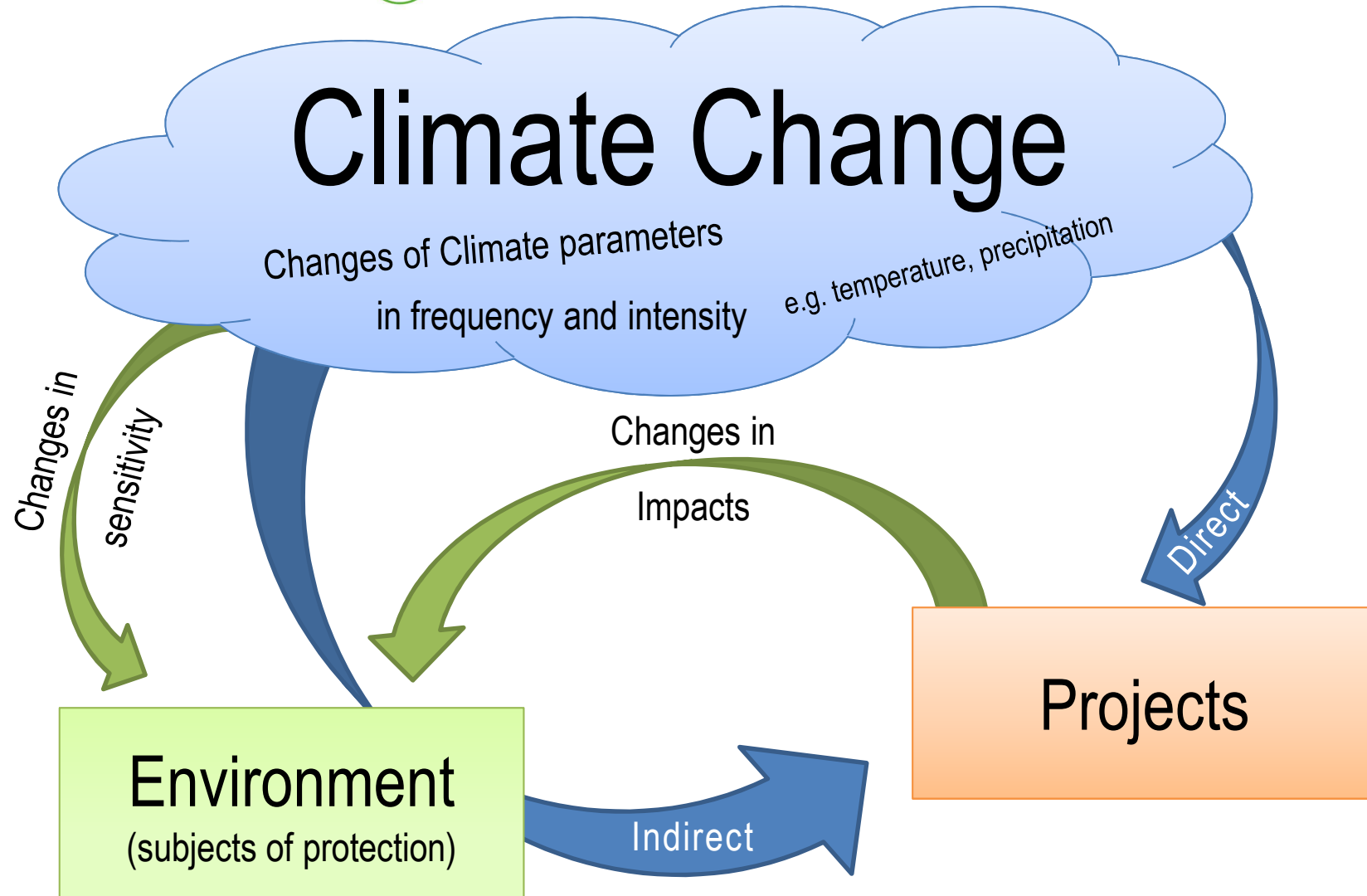
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Our Project Aims

- ▶ **To Analyse:** In which way can **Climate change** impact projects subject to EIA in Austria?
- ▶ How is the awareness for climate change impacts?
- ▶ **Develop a decision support** for project-developers to:
 - help to assess possible impacts of climate change on different project types
 - Already consider possible impacts of climate change in the early phase of project development and design

Research questions

- ▶ **Project planners:** How far CC is considered in project planning subject to EIA at the moment? What relevance is attributed to CC impacts in the future?
- ▶ **EIA experts:** how is the awareness of additional requirements (change of EU-Directive on EIA) and the knowledge of climate change related topics?
- ▶ **EIA-Process & CC:** When – at which steps of the EIA-process - is the consideration of climate change impacts and adaptation recommended?
- ▶ Are there differences between EIA consultants and environmental authorities?



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Our external project partners

▶ Austrian stakeholders of infrastructure projects subject to EIA



ASFINAG Bau Management GmbH – Roads/Highways



Aspern Development AG – Large Housing Infrastructure



Austrian Power Grid AG – Austrian Electricity Infrastructure



Energie Burgenland-Windkraft GmbH – Wind Power Austria



Fachverband der Seilbahnen – Ropeway Association Austria



ÖBB Infrastruktur AG – Austrian Federal Railways



Ökoenergie – Large Renewable Energy Infrastructure



Stadt Wien, MA 21 – City of Vienna, Planning department

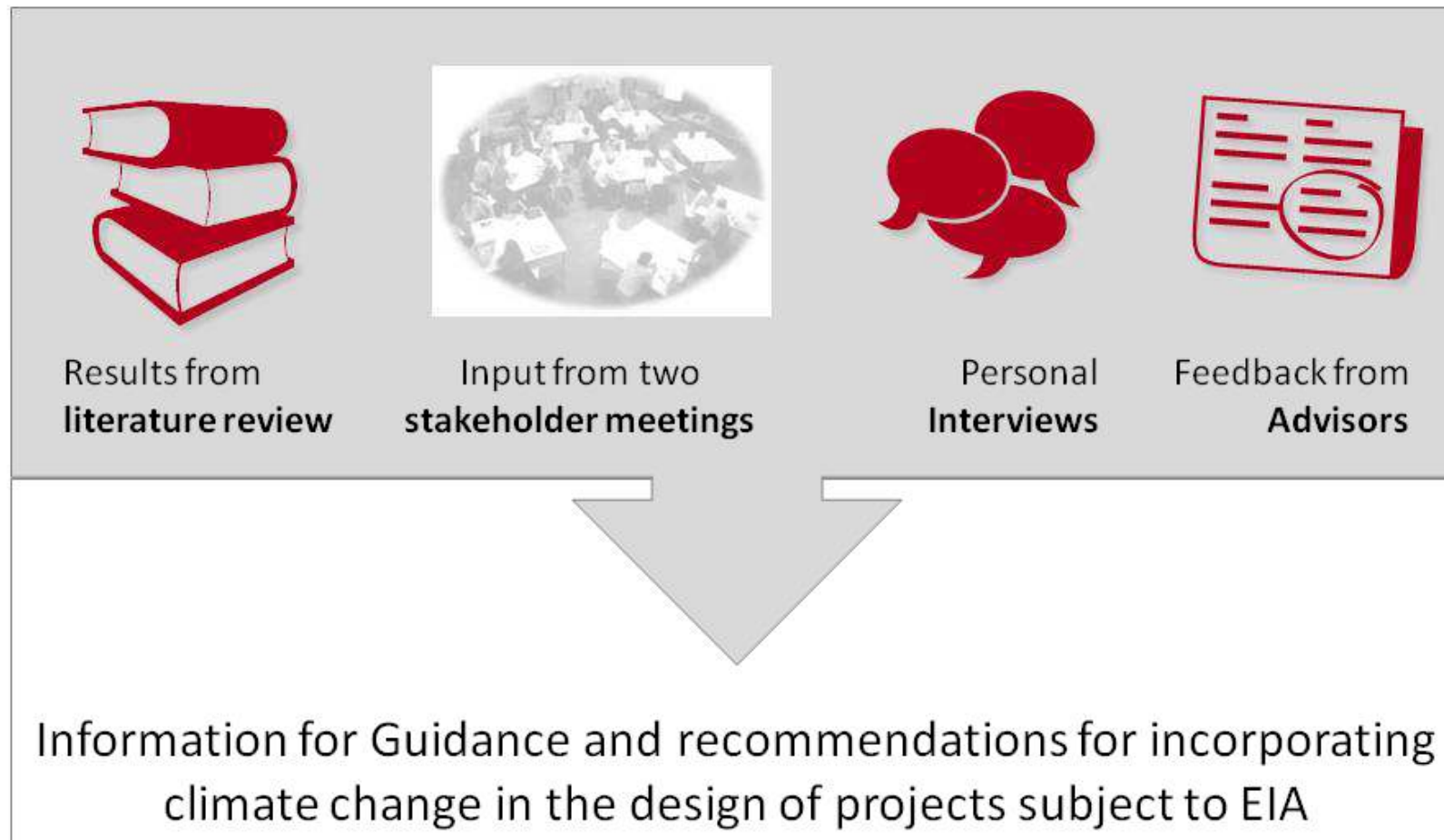


Verbund (AHP) – Austrian Hydro Power



via donau – Austrian water transport association/ water ways

Overview of used methods



Project Report – Status Quo

Review on guidance documents for the consideration of and approaches for inclusion of climate change in EIA, SEA and project development



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ENVIRONMENTAL Impact assessment Satisfying Adaptation Goals Evolving from Climate Change

SCIENTIFIC REPORT WP-1 "STATUS-QUO"

Review on guidance documents for the consideration of and approaches for inclusion of climate change in EIA, SEA and project development

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Umweltbundesamt, Wien: Markus Leitner, Sabine McCallum, Sonja Völler

- 1

Wien, November 2014

Forschungsprojekt im Rahmen des Programms „Austrian Climate Research Programme – ACRP“

3.2.10 Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners

Canadian Environmental Assessment Agency (CEAA) (2003)

Sector relevance/project types:		Most relevant for:	
All		Environmental assessment practitioners; competent authorities;	
Level: regional/sub-national national <input checked="" type="checkbox"/> EU global <input checked="" type="checkbox"/>		Country/Countries: Canada, global	
Type of document:		Content (Approach/Methods):	
Guidance document	<input checked="" type="checkbox"/>	Focus on EIA procedure	<input checked="" type="checkbox"/>
Conception		Stepwise approach	<input checked="" type="checkbox"/>
Literature review		Presenting adaptation options and/or measures	
Scientific paper/publication		Practice examples	
Legal or policy document; (Policy paper)	<input checked="" type="checkbox"/>	Information on climate change and climate risks	
Project report/study		Information on relevant methods and tools	<input checked="" type="checkbox"/>
		Providing Check-lists	
		Presenting Best Practice Principles	<input checked="" type="checkbox"/>

Table 10 Canadian Environmental Assessment Agency (CEAA), 2003: *Incorporating Climate Change Considerations in Environmental Assessment: General Guidance for Practitioners*. Overview on key approach, audience and content framework;

Climate Change Check

Does the **"lifetime"** and **costs** (construction and maintenance) of the project justify the incorporation of climate change related risks and vulnerabilities?

NO

Due to the geographical conditions (alpine location, valley, slope, close to water, etc.) are climate change impacts especially relevant?

NO

Are there general conditions (legal or climate-political context) that support contemplating climate change consequences? (e.g. the national/regional adaptation strategies or action plans)

NO

→ **NO check, „No Impact Statement“**

YES

Climate Change

Changes of Climate parameters
in frequency and intensity e.g. temperature, precipitation

Direct

Projects

Project Report 2 – Climate Change effects and impacts on (infrastructure) projects



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ENVIRONMENTAL Impact assessment Satisfying Adaptation Goals Evolving from Climate Change

ÖIR, Wien (Projektleitung): Gregori Stanzer, Erich Dallhammer, Florian Keringer, Raffael Koscher

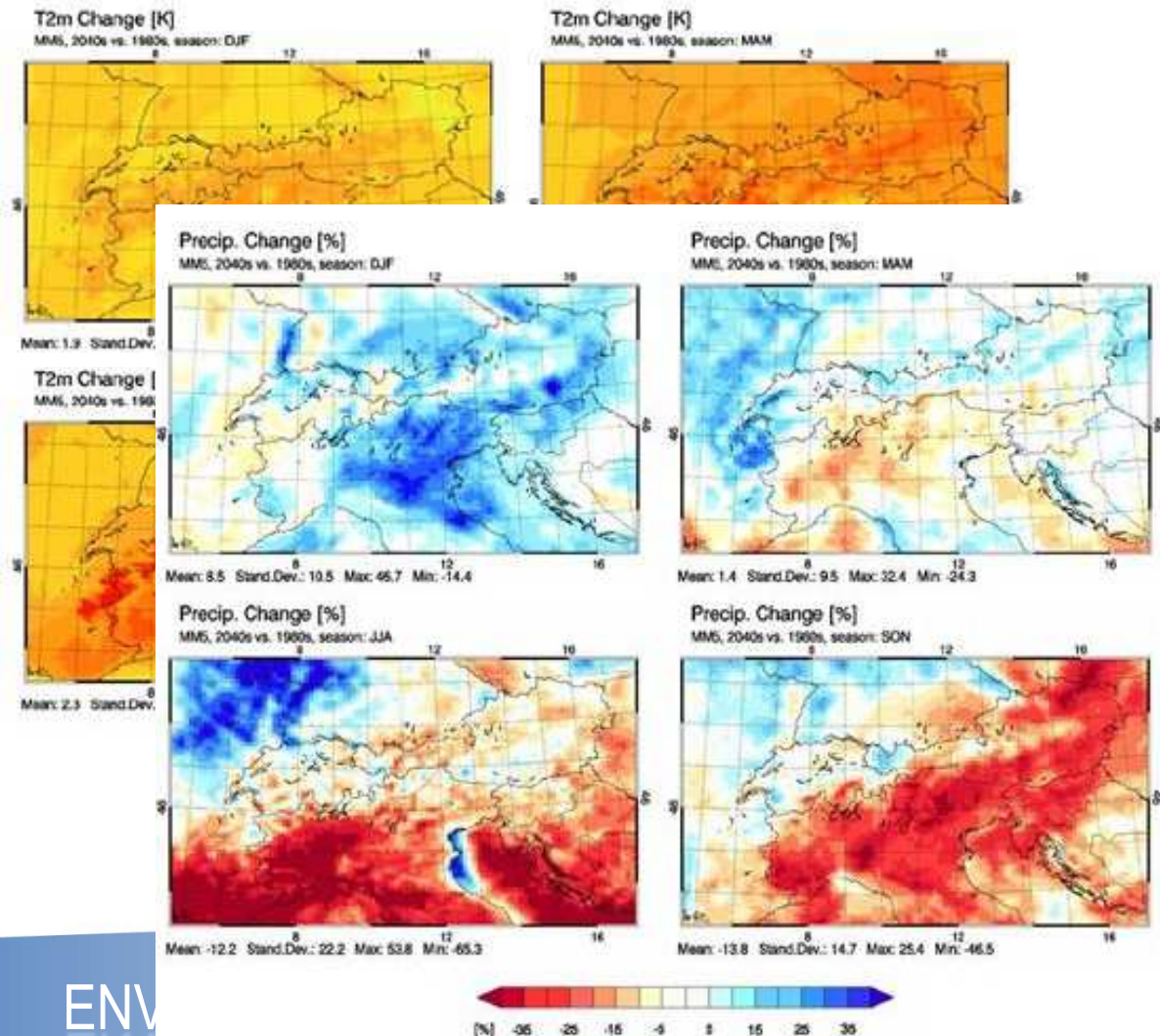
Umweltbundesamt, Wien: Markus Leitner, Sabine McCallum, Sonja Völler

BOKU, Wien: Herbert Formayer, Alexandra Jiricka, Johannes Schmied

Wien, Februar 2014

Forschungsprojekt im Rahmen des Programms „Austrian Climate Research Programme – ACRP“

Im Auftrag des Bundesministeriums für Verkehr, Innovation und Technologie und des Bundesministeriums für Land- und Forstwirtschaft, Umwelt und Wasserwirtschaft



Climate Change Check

2. Which aspects are relevant?

- ▶ Which climate-, weather, or weather-condition relates risks and impacts of climate change are likely to impact the project?
 - Temperature fluctuation; Heat wave
 - Mean temperature change
 - Cold spell
 - Large-scale heavy precipitation, small-scale heavy precipitation
 - Drought/drought periods
 - Snowfall (wet snow); snowfall above / below 1.500 meters
 - Freezing rain
 - Wind (small scale thunderstorm)
 - Wind (large scale atlantic storms, foehn)

Project Data-Sheets for nine project types

- ▶ Railways
- ▶ Highways
- ▶ Waterways
- ▶ Hydro power plants
- ▶ Ski-lifts and slopes
- ▶ Power grids
- ▶ Wind parks
- ▶ Urban development
- ▶ Golf-courses

Climate Change

Changes of Climate parameters
in frequency and intensity e.g. temperature, precipitation

Environment
(subjects of protection)

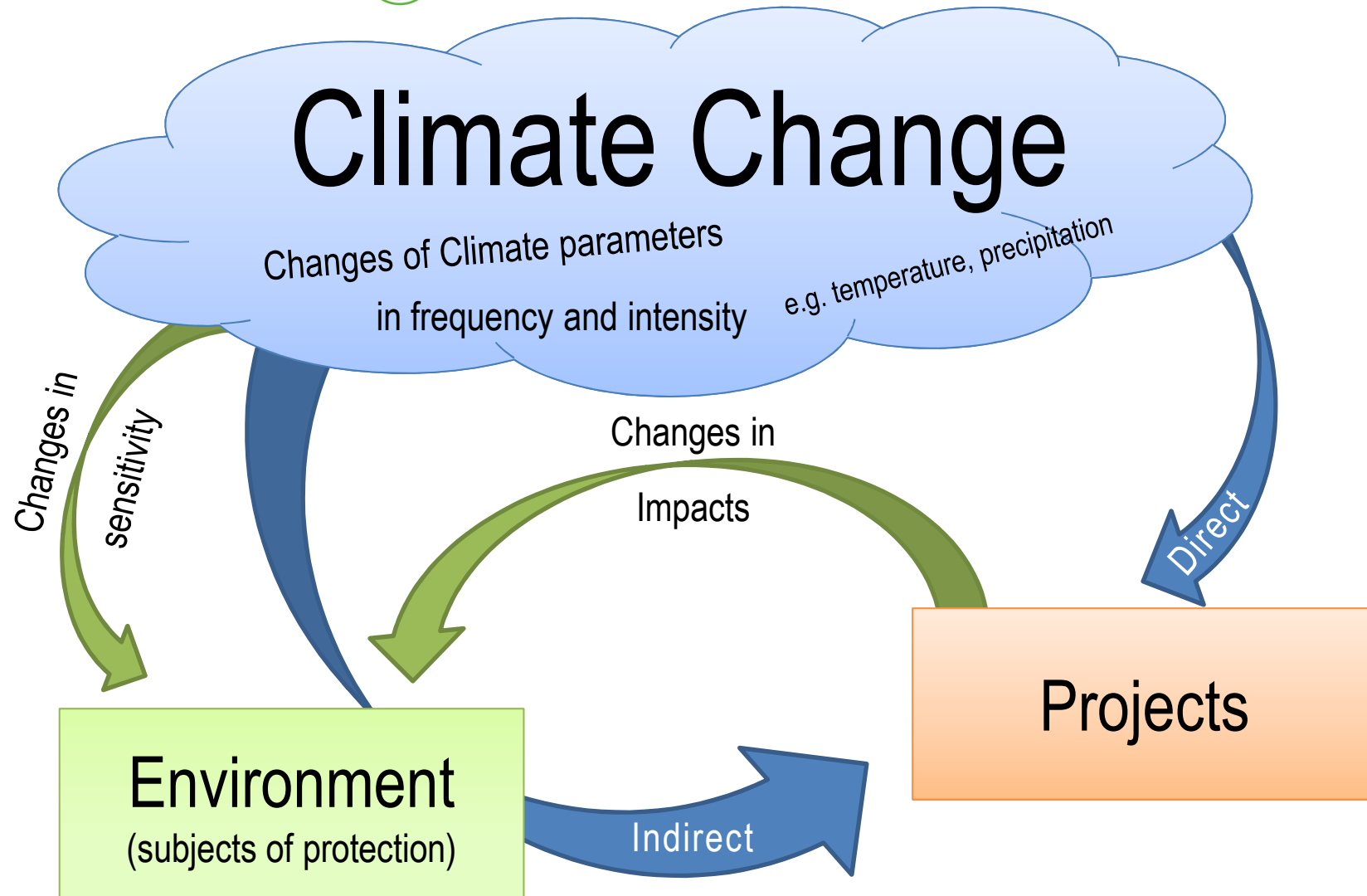
Projects

Indirect

Direct

Impacts on projects

Example	Indirect effects	Direct effects
Small scale heavy precipitation	Increased soil erosion (e.g. slope-surface / power grids location in alpine areas)	washout of infrastructure
Storm	blockage of railroad line / streets / power grids by trees (wind breakage/wind throw)	shutdown of wind farms, black-outs
Heat/drought	Forest fires	Overheating material/electric facilities



Changes in the sensitivity of environmental issues

- ▶ Animals/plants/ecosystems: shift of areal borders and increased appearance of (thermophile) pests
- ▶ expansion of thermophile, non-resident species

Practical relevance in the EIA and project planning

- e.g. consideration in compensation measures (reforestation, maintenance)
- Changed classification of level of endangerment of animals/plants
- ▶ Example “mountain hare”:
 - Additional climate change decreases the area of mountain hare ... the hare is increasing its territory by 6 meters of altitude each year

Implementation and Monitoring

- Construction phase
- Operation phase
- Maintenance

Planning of climate change adaptation options

- ✓ *Which adaptation measures might be relevant and shall be implemented?*
- ✓ *How can the effectiveness of adaptation measures be monitored?*
- ✓ *How can a long-term monitoring of climate change impacts be ensured?*

The guidance is online available via

- ▶ http://www.klimawandelanpassung.at/ms/klimawandelanpassung/de/anpassungandenklimawandel/kwa_tools/kwa_leitfaden/kwa_envisage1/
- ▶ https://meteo.boku.ac.at/report/BOKU-Met_Report_24_online.pdf



umweltbundesamt^U



Thank you for your attention!

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