

CORDEX.be II - Kick-off stakeholder meeting 13.02.2023

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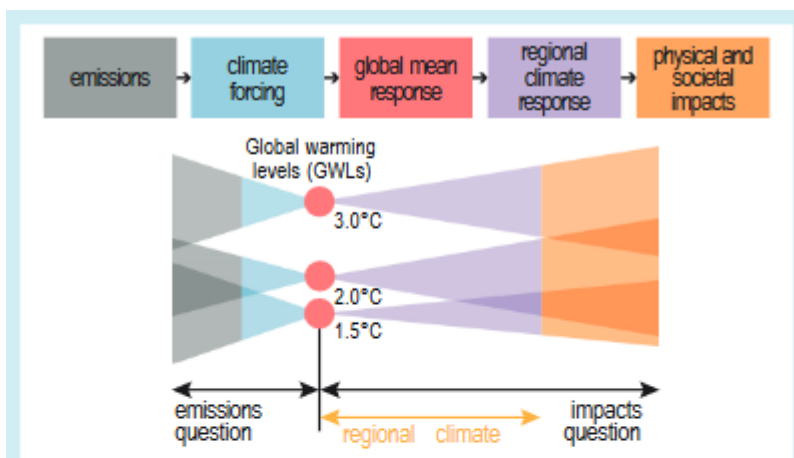
Summary of the discussions and breakout session

Methodological choices

Scenario approach based on Global Warming Levels (GWL)

General

As stated in the AR6 IPCC-report, this GWL-based approach is very relevant in policy context, as it links the expected climate change under the GWLs with the pledges of the Paris Agreement as well as on the consequences if the targets are not reached under GWLs of 3°C or 4°C by the end of the century ([IPCC AR6, Chapter 11](#), Cross-Chapter Box 11.1).

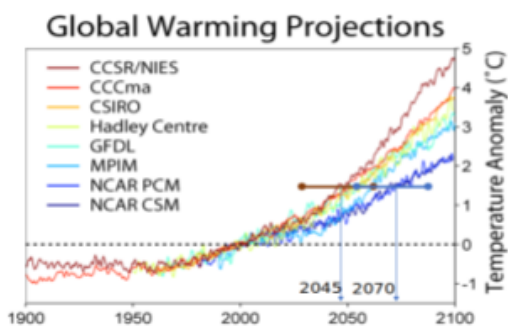


Cross-Chapter Box 11.1, Figure 1 | Schematic representation of relationship between emissions scenarios, global warming levels (GWLs), regional climate responses, and impacts. The illustration shows the implied uncertainty problem associated with differentiating between 1.5°C, 2°C, and other GWLs. Focusing on GWLs raises questions associated with emissions pathways to get to these temperatures (scenarios), as well as regional climate responses and the associated impacts at the corresponding GWL (the impacts question). Adapted from James et al. (2017) and Rogelj (2013) under the terms of the Creative Commons Attribution licence.

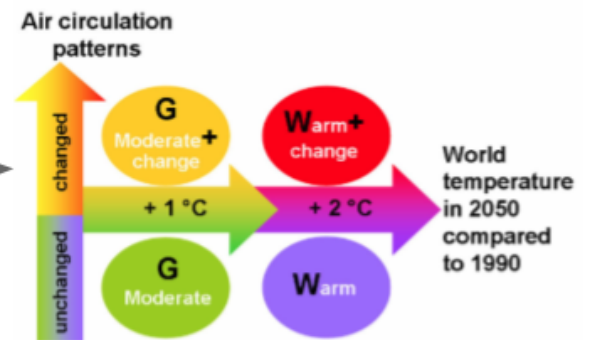
Approach

1. Based on Regional Climate Model data, select a historical period and a 30-year future period around the time when respective Global Warming Levels are exceeded (e.g. 1.5°C, 2°C, 3.5°C warming).
2. Select and categorize the Global Climate Models according to common changes in weather patterns for these Global Warming Levels, resulting in a set of Belgian Climate scenarios.

1. Define Global Warming Levels

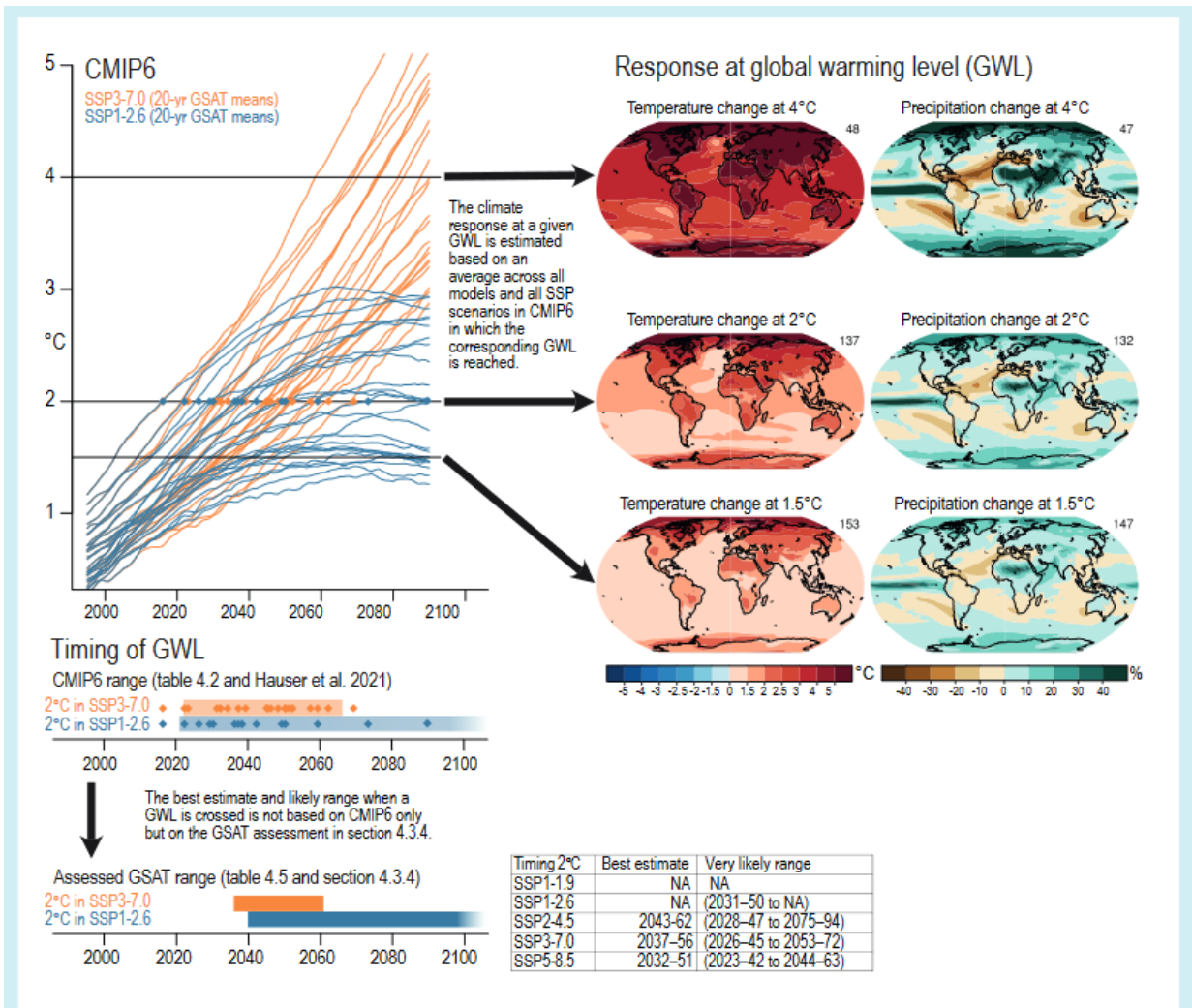


2. Belgian Climate scenarios



⇒ All stakeholders expressed their interest in the GWL scenario approach, to use 'a possible future' and no need for uncertainties or a spread.

- [VMM, AWAC, City of Ghent] Need for one GWL which is high enough to take into account the high impact scenario. High impact is essential in the context of adaptation. (note: high impact is different than worst-case)
- [VMM, AWAC, City of Ghent] Generally, in policy context it is difficult to cope with uncertainty and thus there is no need for results from different models or Shared Socioeconomic Pathways, clear key messages are important.
- [Federal Climate Change Department] The focus in the current Federal and National Adaptation Plans is on the most pessimistic RCP8.5 scenario. The most pessimistic scenario would thus also be most relevant for the updated scenarios. Although this will depend on the ongoing mitigation measures and at the moment there is no scenario defined in the policy plans that include the effects of the ongoing measures.
- [VMM, AWAC, City of Ghent, Federal Climate Change Department, NCCN] Leave the option that a GWL can be linked to a time frame, as time horizons are essential in the formulation of policy measures ⇒ Fig. 3 below from [IPCC AR6, Chapter 11](#), Cross-Chapter Box 11.1, illustrates how timing and climate changes at a given GWL can be derived.



Cross-Chapter Box11.1, Figure 3 | Illustration of the AR6 global warming level (GWL) sampling approach to derive the timing and the response at a given GWL for the case of Coupled Model Intercomparison Project Phase 6 (CMIP6) data. For the mapping of scenarios/time slices into GWLs for CMIP6, please refer to Table 4.2. Respective numbers for the CMIP5 multi-model experiment are provided in Chapter 11 Supplementary Material (11.SM.1). Note that the time frames used to derive the GWL time slices can also include a different number of years (e.g., 30 years for some analyses).

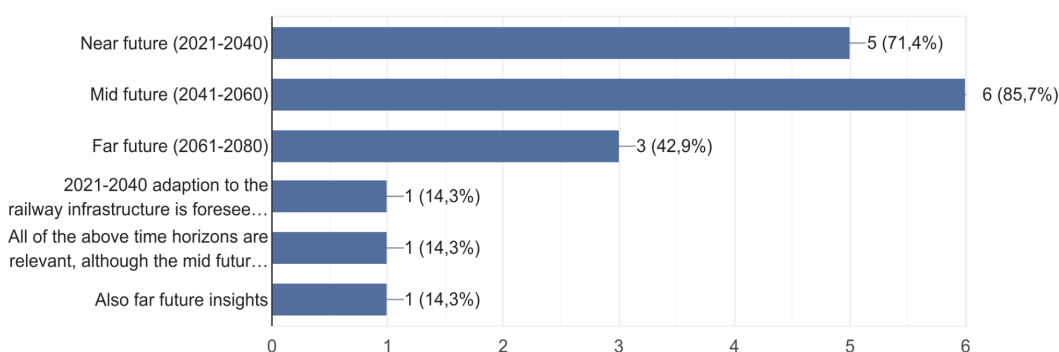
Time horizons

⇒ **Near and mid future (2021-2040; 2041-2060) receive priority from all stakeholders. This indicates that low GWL (e.g. 1,5°C or 2°C) are most priority.**

- Far-future horizon is also relevant for all stakeholders.
- [City of Ghent] Near-future (2030) is a priority in the adaptation plans, but not an end goal.

What time horizon would be most relevant for your application(s)?

7 antwoorden



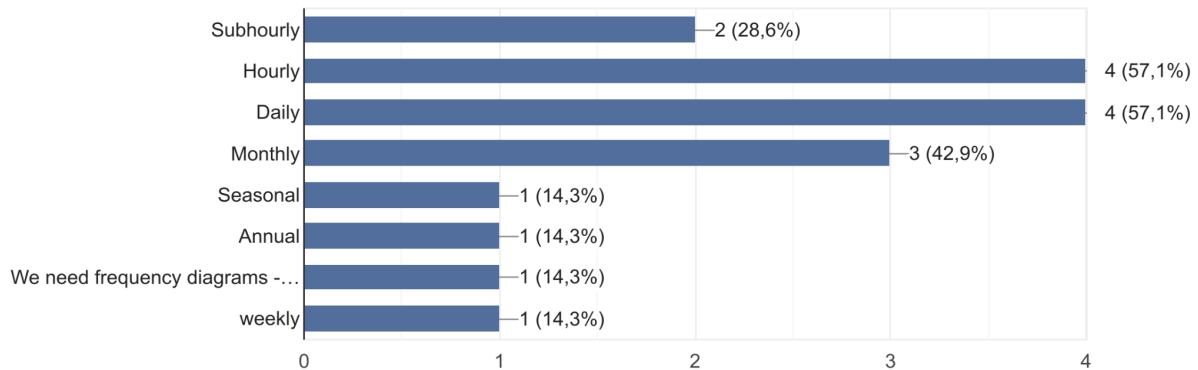
Temporal resolution

⇒ **Priority by the stakeholders is given to hourly, daily and monthly temporal resolutions.**

- [NCCN and VMM] Subhourly might be needed to allow for the calculation of the resp. frequencies/statistics of the needed climate indicators

What temporal resolution would be most relevant for your application(s)?

7 antwoorden



⇒ See also [lists and info on required climate parameters and indicators provided by NCCN and VMM.](#)

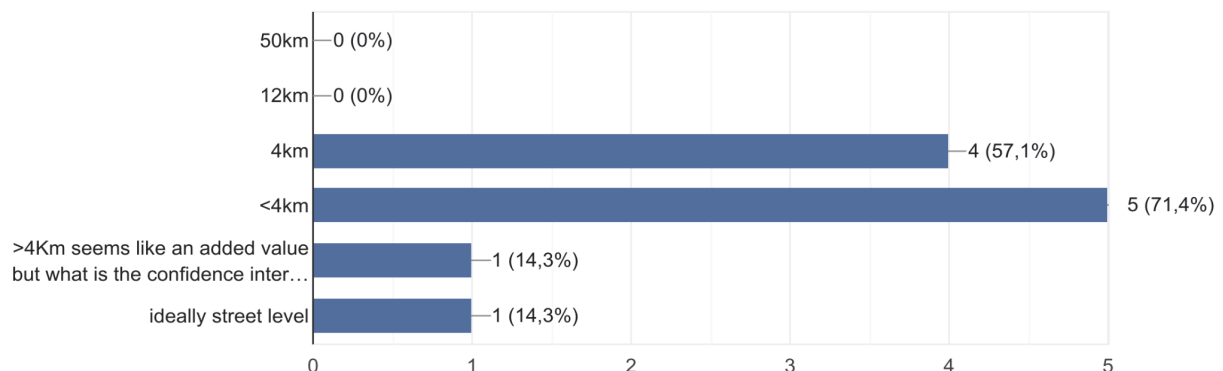
Spatial resolution

⇒ **All stakeholders would need as detailed climate data- and information as possible; i.e. minimum spatial resolution of 4 km.**

- [City of Ghent] Interest in heat stress on citizens, information needed on neighborhood or even street level.

What level of spatial detail would be most relevant for your application(s)?

7 antwoorden



Interest and foreseen use of project outcomes

⇒ **The stakeholders express a diverse need in project outcomes.**

Raw model data

⇒ **SPW-MI, AWAC, VMM, NCCN needs a climate data set which is long enough (e.g. 100 years of data) to allow for calculation of statistics or to be used as input for hydrological models like SPW-MI.**

- [City of Ghent] No need for raw model data by themselves, but external partners of them might be interested in raw model data in the context of studies.
- [SPW-MI] Raw model data needed, as input for their hydrological model and applications. 30 years of data is the minimum length needed.
- [NCCN and VMM] Raw model data needed to derive statistics (probabilities, frequencies) for resp. climate indicators ([see lists provided](#)).

Statistics (extreme value statistics, probabilities and frequencies)

- [VMM and AWAC] Policy makers generally do not think in terms of probabilities.
- [NCCN and VMM] Raw model data needed to derive statistics (probabilities, frequencies) for resp. climate indicators (see lists provided).

Storylines

- [VMM and AWAC] Interest in storylines on precipitation and heat, but a brief description on how other climate parameters would evolve under climate change would also be of interest to them.
- [City of Ghent] Interesting for communication and awareness raising, as well as for the development of adaptation measures. Willing to contribute to the elaboration of the storylines.

Policy advices

- [Federal Climate Change Department] Mainly interested in the data to be passed to their stakeholders as well as to include and translate the project conclusions into their policy plans, reports or website (e.g. www.klimaat.be). The project results could also be useful for them to update the adaptation measures as formulated in the Federal and National Adaptation plans (which will be updated in 2023-2024).

Availability of project outcomes

⇒ **General need to make the project results consistently available (ranging from raw model data to statistics/maps/graphs to qualitative conclusions).**

- [City of Ghent] Important to retrieve the data in a user friendly way. E.g. they currently use a great part of their needed climate information through the Climate portal of VMM.

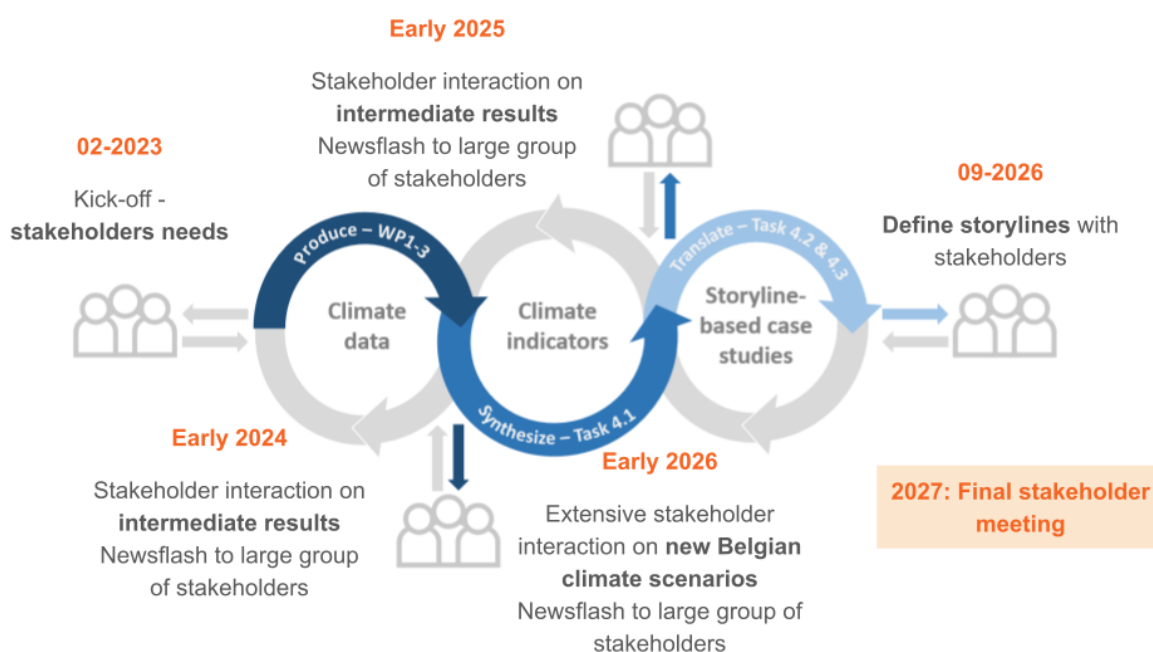
Communication and stakeholder interaction

- website: <https://cordex.meteo.be/>
- digital 'newsflash' by mail
- when stakeholder-related-decisions need to be taken

Overview results of the survey

⇒ see [slides used for the discussions during the breakout session](#).

General timeline



Participants

Stakeholders

- Jelle Dehaen and Samuel Lietaer, Federal Climate Change Department of Federal Public Service (FPS) Health, Food Chain Safety and Environment
- Olivier Robyns, Service for Critical Infrastructure Protection and Risk Assessment of the National Crisis Center
- Christelle Dère, Service public de Wallonie - mobilité infrastructures, Département Expertises Hydraulique et Environnement, Direction de la Gestion Hydrologique
- Anaïs Lecoq, Service public de Wallonie, Walloon Air & Climate Agency
- Johan Brouwers, Flanders Environment Agency - Dienstencentrum Water, Lucht en Klimaatadaptatie
- Maaike Breugelmans, Dienst Milieu en Klimaat, City of Ghent

Consortium

- Piet Termonia, Rafiq Hamdi, Pierre Baguis, Nicolas Ghilain, Kobe Vandelanotte, Bert Van Schaeybroeck, and Rozemien De Troch, Royal Meteorological Institute of Belgium
- Fien Serras, KULeuven
- Filip Lefebvre and Dirk Lauwaet, VITO
- Steven Caluwaerts, UGent
- Xavier Fettweis and Josip Brajkovic, ULiège
- Valerie Trouet, Belgian Climate Centre

Presentations

The presentations that were given can be found [here](#).