BRAIN-be
Belgian Research Action through Interdisciplinary Networks

CICADA

Coherent Integration of climate projections into Climate ADaptation plAnning tools for BElgium

DURATION
15/03/2019 – 15/03/2021

BUDGET
20 000 €

Valorisation of the BRAIN-be project
CORDEX.be

PROJECT DESCRIPTION

A valorisation of the CORDEX.be project results is proposed by integrating the climate model projections into existing online tools for climate adaptation. More specifically, based on the needs of the stakeholders (FPS Health, VMM and AWAC), the aim is to first decide with the consortium on a best methodology to represent the climate change results from the high-resolution (RCM) CORDEX.be projections. Maps and data will then be produced that serve as direct input for the regional support tools for adaptation (adapt2climate.be, https://klimaat.vmm.be/ and http://leswallonssadaptent.be/).

The CORDEX.be project (2015-2017) established the first building blocks for climate services in Belgium (Termonia et al, 2018a). This was done by performing multiple climate simulations with different regional and impact models over Belgium. Although CORDEX.be was limited in time (2 years) it involved nine partners and produced a wide range of climate data that still require further exploration. This includes for instance the set of climate projections with very high spatial details produced with different Regional Climate Models (RCMs) over Belgium, a milestone that was unprecedented worldwide (Termonia et al., 2018a). However, two years were insufficient to close the full chain of climate services from the raw scientific data to the effective use of the data by stakeholders.
In light of the newest report of the Intergovernmental Panel on Climate Change (IPCC) Global Warming of 1.5°C it has become clear once more that climate adaptation and mitigation measures need urgent implementation. This has led to a strong need in climate information to enable well-informed policy decisions. In order to meet this need, climate adaptation tools have already been developed by Flanders (klimaat.vmm.be, Lokers et al. 2018) and by Wallonia (leswallonssadaptent.be) and are being developed by the by the Federal government (see future adapt2climate.be). The VMM portal only partly includes the results of the RCM models from the CORDEX.be project (Lokers et al. 2018) while the adaptation tool of Wallonia is still based on old climate projections from the ENSEMBLES project. Therefore we propose a valorisation of the CORDEX.be project by incorporating to a maximal extent the CORDEX.be data into these tools. This, however, must be done with care. For instance, uncertainties must be taken into account by analysing other climate projections over Europe (EURO-CORDEX simulations of lower spatial detail). Also, particular attention must be paid as to the coherence of the results across borders within Belgium (Flanders/Wallonia) and outside (e.g. with results of EEA report).

Implementation plan

Task 1 Organize a meeting with stakeholders (FPS Health, VMM and AWAC) to collect the requests, needs, suggestions and practical limitations in the context of their climate-adaptation tools.

Task 2 Based on deliverable D1 the aim is to prepare climate-change maps of different variables and different CORDEX.be models potentially including also uncertainty estimations from the international CORDEX results for Belgium. These will be produced for different climate models, scenarios and variables. Combining these results and the stakeholders needs, a pre-analysis will be done in order to revise the existing climate-change maps (the ones existing on klimaat.vmm.be and on leswallonssadaptent.be).

Task 3 Based on the pre-analysis (D2), a proposal will be formulated on how to best incorporate the climate data into the adaptation tools. An expert team meeting will be organized where this proposal and D2 will be presented and discussed. All CORDEX.be promoters and stakeholders will be invited but the vital members include the RCM modellers and analysts. This committee will give an advice on how to coherently integrate the ensemble results into the climate adaptation portals.

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Task 4 Communicate D3 to the stakeholders and agree on the final set of data that will be incorporated into the climate adaptation tools.

Task 5 As a final step a data preparation is necessary followed by a data implementation in close cooperation with the stakeholders.

An external collaboration will be started with the Vlaamse Milieumaatschappij (VMM, Kris Cauwenberghs and Johan Brouwers), the SPW Agence Wallonne de l'Air et de Climat (AWAC, Julien Hoyaux) and FPS Health (Claire Collin). P2 was already strongly involved in the implementation of the climate information into the VMM climate portal (klimaat.vmm.be, Lokers et al., 2018). These climate tools and portals are used by a wide range of authorities (local, regional, federal) for planning and decision making on climate adaptation.

It is clear that a successful cooperation with the stakeholders (FPS Health, VMM and AWAC) may lead to a long-term cooperation such that on the long term further developments in the high resolution climate models, as initiated by the CORDEX.be project, will be considered by these stakeholders. This will increase the uptake of such scientific developments in support of the regional climate adaptation planning in Belgium.

The cooperation with and between the Federal, Walloon and Flemish authorities can be seen as an additional achievement.

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