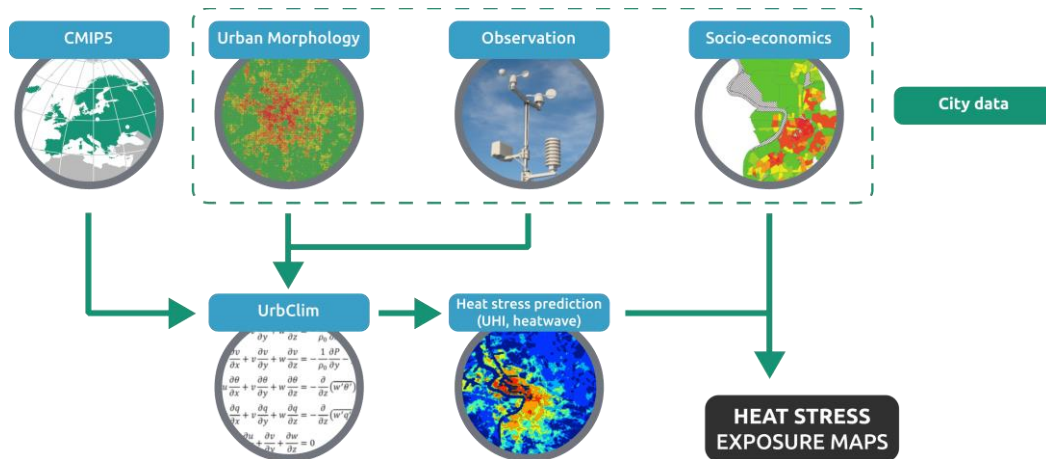


WP 4.2 in short

Once upon a time – NACLIM – impact on urban societies ...



UrbClim model input parameters extraction

Previously Berlin urban planning data had been processed. All related urban indices have been recalculated including updating the LULC to the situation 2030.

During the 1st quarter of 2015, Almada and Antwerp future urban morphology indices were likewise estimated from several urban plans provided by the end-users.

The calculation of those projected urban morphology indices concluded the work to be done in matters of UrbClim input data treatment.

All indices have been delivered to VITO and are integrated into the UrbClim model to run the following defined scenarios:

- Base scenarios 1986-2005;
- Base scenarios 2026-2045;
- Base scenarios 2081-2100;
- Urban Planning scenarios 1986-2005;
- Urban Planning scenarios 2026-2045.

UrbClim model progress

In 2015, the urban climate team at VITO has been busy to perform the remaining UrbClim simulations for the NACLIM project, including the urban planning scenarios for all three user cities. This work is nearly completed and the results have been handed over to GIM.

Furthermore, the impact of land use changes on the average temperatures and number of Heat Wave Days has been investigated in detail with the UrbClim model through some test scenarios. It turns out that rather solid relationships can be established between the change in soil sealing and the nighttime minimum temperatures. It has to be noted that the changes, when looking at the spatial scales of the UrbClim model, are limited.

All the details of this work, and the other results that we obtained, can be read in our latest deliverable (D42.33) which can be found in the 'Publications/Deliverables' section on www.naclim.eu.

We have also written a scientific paper on these results which will be published shortly in the open access 'Climate' journal.

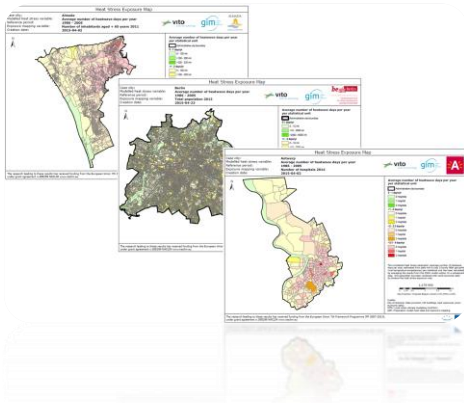
Over the next few months, we will perform more test simulations with the UrbClim model to assess the effectiveness of adaptation measures (higher albedo, greening,...) for all three cities. Furthermore, we are working on a method to downscale these results to street level in order to improve the usability of the results and show that on the very local scale the effect of adaptation measures can be large.

We aim to finish this work after the summer so we can present it at the NACLIM meeting in Almada. See you there!

Heat Stress Exposure mapping

From the base scenarios 1986-2005, GIM extracted the UHI effect and number of heat wave days for each city.

Those UHI variables were then mapped on statistical units and combined with socio-economic data in order to produce exposure risk maps. A dozen of maps are generated per city. The full set of exposure maps for this scenario will soon be finalized and provided to the end-users, including upload to the CT4.2 data portal on the NACLIM website.



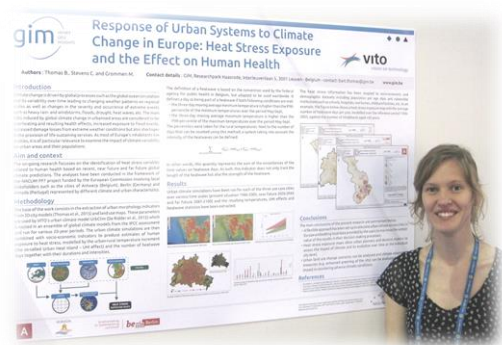
GIM at EGU 2015

Last 15th and 16th of April 2015, GIM was at the EGU 2015 assembly in Vienna to present a poster and to give an oral presentation.

Poster

Response of Urban Systems to Climate Change in Europe: Heat Stress Exposure and the Effect on Human Health

http://naclim.zmaw.de/fileadmin/user_upload/naclim/Archive/Dissemination/EGU-2015/NACLIM_EGU2015_5068_Oral_GIM.pdf



Oral presentation

Interaction between Cities and Climate Change: Modelling Urban Morphology and Local Urban Planning Scenarios from Open Datasets across European Cities

http://naclim.zmaw.de/fileadmin/user_upload/naclim/Archive/Dissemination/EGU-2015/CL_GIM-Thomas_2015-04-15.pdf

What's next?

The next steps are the following:

- Perform UrbClim simulations for the urban planning scenarios for Almada;
- Processing and extraction of heat stress variables for the remaining scenarios;
- Creation of exposure maps for urban planning scenarios 2026-2045;
- Creation of heat stress variables maps (UHI effects and average number of heat wave days) per grid cell and per statistical unit for each scenario.