

UrbClim model progress

After the fruitful discussion at the NACLIM annual meeting in Berlin, the research teams at VITO and GIM came together to discuss the work to be done in the final year of the project.

Firstly, new input parameters for the city of Almada were delivered to VITO by GIM, taking into account the new data sets and remarks by Almada. These data are now being used by VITO to rerun the simulations for Almada.

Next, the urban planning scenarios for all three cities will be processed by GIM and delivered to VITO. Afterwards, the simulations for the current and future climate situation will be performed again to assess the impact of the scenarios.

At the same time, the potential of adaptation measures (e.g. greening of the city, changing the albedo of the roofs,...) will be investigated on city-wide scales with our UrbClim model. The exact details of this work will be discussed by the Urban Climate team at VITO at the start of 2015 and communicated afterwards.

Some inspiration ☺:



<http://vegetalcity.net>

Enjoy the holidays and have a Happy New Year!

UrbClim model input parameters extraction

The urban indices for the current situation (1986-2005) of Antwerp and Berlin were already extracted in the 2nd quarter of 2014. For Almada, updated results for the current situation have been produced based on the feedback received during the 4th end-users meeting:

- Integrate new vegetation based land use map;
- Integrate urban green / city parks layer;
- Extend area of interest to include the full Almada city boundaries.

The updated LULC map and vegetation layers have been reviewed and approved by the city of Almada.

Finally, Berlin urban planning data has been processed. All urban indices have been recalculated and projected LULC for 2030 was extracted based on intended land use info for more than 800 urban planning sites.

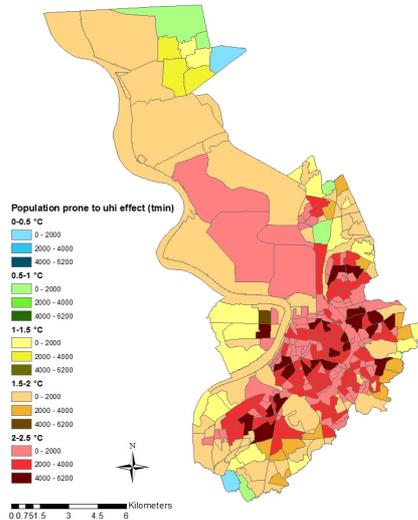
Risk exposure mapping

The UrbClim model output was processed by GIM in order to extract the following information:

- UHI effect
- Number of heat waves /heat wave days
- Heat wave duration
- Heat wave intensity

These variables linked to heat stress were mapped to the statistical units and combined with socio-economic data in order to produce exposure risk maps.

First experimental maps were generated, e.g. *population versus UHI effect (Antwerp)*.



Annual Meeting and 4th End-Users Meeting

Half October 2014, the **annual meeting of the NACLIM project** took place in Berlin. The end-users, VITO and GIM joined this meeting. All geoscientists were brought together to share the progress of their work. VITO and GIM presented the results of the last year (presentations available on www.naclim.eu 'Annual Meetings'). Following the annual meeting, **the 4th end-users meeting** took place the 16th of October 2014.

VITO presented the UrbClim model output for each city including the influencing factors on the UHI effect and the granularity of the model. Finally, the impact of various mitigation measures has been discussed.

GIM presented how the various UrbClim input parameters have been extracted from the local city data and how heat wave / exposure statistics have been calculated.

Finally, Almada introduced the mission and the work of the environmental department and sketched their expectations about the NACLIM project.

Web visibility

Several initiatives were undertaken with respect to the dissemination of the work, data and methodology.

On the NACLIM website every end-user got a page describing the city in detail. A CT4.2 Data Collection page was created and soon data could be downloaded from this webpage (ref. www.naclim.eu).

Upcoming events

GIM and VITO expect to attend following upcoming conferences in 2015:

- EGU conference, April 2015
- ECCA conference, May 2015
- Resilient Cities ICLEI conference, June 2015

What's next?

The next steps are the following:

- Update urban indices integrating Almada and Antwerp urban planning data
- Run UHI scenarios for the current and near future (climate) situation
- Finalize exposure mapping templates
- Create heat stress exposure maps for current situation and for 2030
- Document procedures and methodology