The Green Circles Initiative

A public-private partnership for sustainable and climate proof regional development

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Brewing the future

Heineken Brewery has joined forces with Wageningen Environmental Research (Alterra), the drinking water company, the water board, and the Provincial government of South Holland in their ambition for a green and sustainable environment. The initiative is called Green Circles. One of the aims is environmentally responsible and climate smart water management, to secure sustainable water management in the area South-Holland, the Netherlands, towards 2030.

This poster illustrates the process of providing tailored information on climate change in the context of the public-private partnership Green Circles.

Setting

Heineken Brewery uses local river water for its brewing process at its location Zoeterwoude. The quality and supply of this water is of major importance and climate change could threaten this. Furthermore, due to climate change floods as well as dry periods could occur more frequently in the future.

A linkage between the European climate service data platforms, the national Dutch climate effect atlas and expert judgement are established to map the story about climate change and relate this to the regional development ambitions. Interactive design workshops were held and all involved stakeholders in the region were invited to visualize concrete ideas on how adaptation can contribute to improving the quality of the living environment, and the opportunities for businesses in the area.

Indicators and tools

The Copernicus Climate Change Service (C3S) for Water Indicators in Climate Change Adaptation (SWICCA) offers the most up-to-date indicators of climate change. Represented graphically, these data help the wider community to understand impacts of climate change at pan-European level.

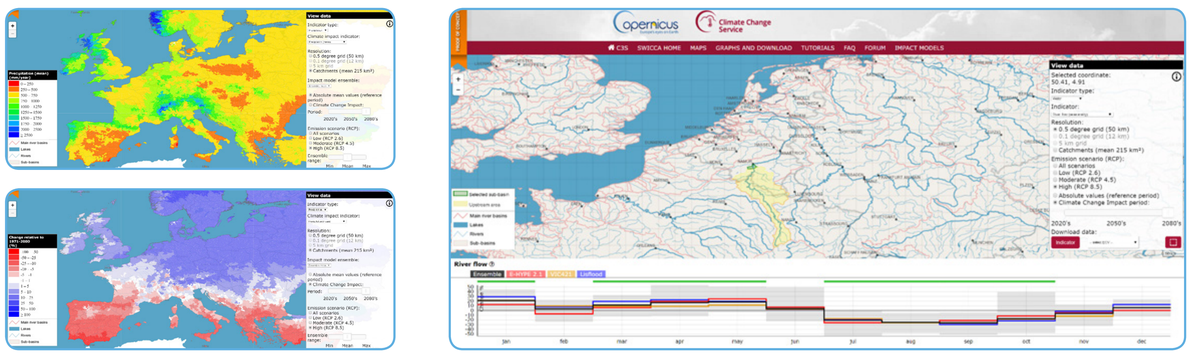

Figure 1 The SWICCA climate service portal (http://swicca.climate.copernicus.eu/) is used to help the wider community to understand the impact at a pan-European level. In example the development of average annual precipitation and the change in discharge for the river Meuse.

a. average annual precipitation current climate
b. relative change (in %) between current climate and climate in 2080
c. discharge river Meuse in 2080 in the high climate scenario (RCP8.5)

Water used for drinking or industrial processes in the Randstad area of the Netherlands depends on water flow in the catchment of the Meuse. The SWICCA indicators were used to analyze water flows during the summer (*Figure 1*). Key issues are soil subsidence, salinization, maintaining a sustainable transport system, biodiversity and availability of sufficient clean drinking water in the future.

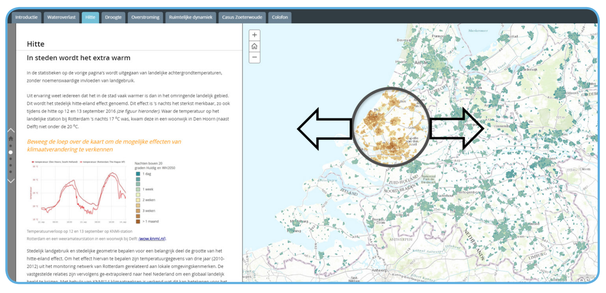

Figure 2 The climate lens, gives a sneak preview of the future climate

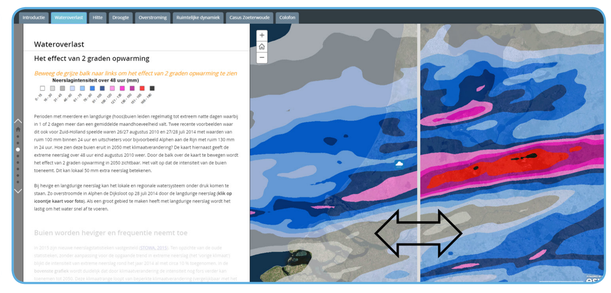

Figure 3 Sliding the bar, visualizes an extreme rainfall event in a 2° C

As a next step 'story mapping' and atlases (*Figure 2 and 3*) are used as promising tools to bring the information about the impacts of climate change together and open constructive opportunity driven discussions towards adaptation planning.

Challenge

The interactive design workshop highlighted the challenge of linking the European, national, regional and local scales on understanding the impacts of climate change and discussing how to adapt to these impacts.

A lot of research has been done in the recent years on the impacts of climate change. At the European and national levels there are various reports, tools, and data platforms available which detail and visualize the impacts of climate change. At the same time there is a need to further tailor and translate the flow of information to knowledge purveyors and ultimately to societal end-users. A complicating factor is the spatial scale level, where end-users work on much smaller scales than the original global modelling sources of climate information.

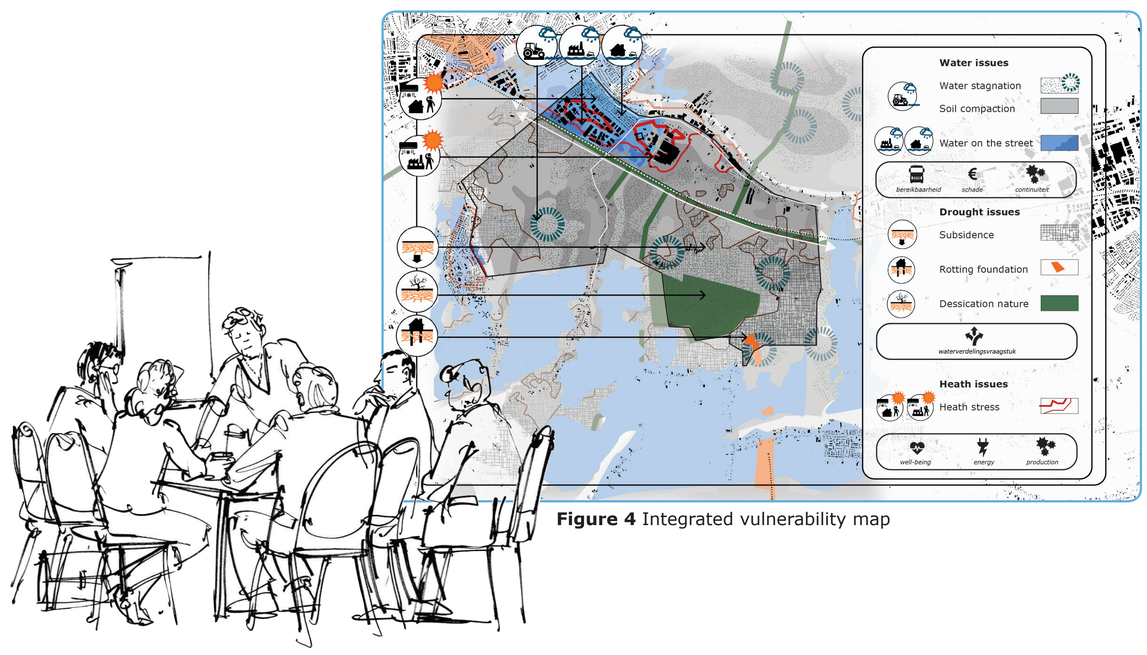

Figure 4 Integrated vulnerability map

Conclusion

Heineken Brewery aims to extend its climate neutral practices, developed within the Green Circles initiative, across its breweries. Copernicus Climate Change Services (C3S) climate information will be essential in achieving this, as unlike the Netherlands, many countries do not publish the same level of local climate data. Future climates will change the availability of resources and affect economies. C3S offers important observations, reanalysis, forecasts and projections to help identify trends that will underscore business decisions.

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SWICCA is a Copernicus Climate Change Services (C3S) project run by SMHI, on behalf of the European Centre for Medium-Range Weather Forecasts (ECMWF) for the European Commission
http://swicca.climate.copernicus.eu